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Personnel

COMBAT ARMS TRAINING AND MAINTENANCE M60 MACHINE GUN, MK 19 40MM MACHINE GUN, AND M2 .50 CALIBER MACHINE GUN PROGRAMS

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This manual implements Air Force Policy Directive (AFPD) 36-22, *Air Force Military Training, and Air Force Instruction* (AFI) 36-2226, *The Air Force Combat Arms Training and Maintenance Program.* It gives guidance and procedures for M60 machine gun, MK 19 40mm machine gun, and M2 .50 caliber machine gun programs.
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Chapter 1

M60 MACHINE GUN TRAINING PROGRAM

1.1. M60 Machine Gun Air Force Qualification Course (AFQC). This course provides Air Force members with the minimum training and evaluation required to qualify with the M60 machine gun.

1.1.1. **Individual Machine Gunner.** A machine gunner qualified to employ the M60 in the bipod mode (from 300 to 800 meters) and when vehicle mounted.

1.1.2. **Crew-Served Machine Gunner.** A machine gunner qualified to employ the M60 in all modes with the aid of an assistant gunner. Assistant machine gunners must complete the same training program and meet the same qualification standards as primary machine gunners.

1.2. Training Overview:

1.2.1. **Initial Individual Machine Gunner Qualification.** This is the trainee's first participation in the M60 Individual Qualification Training Program. Initial training consists of classroom instruction, qualification on the required evaluation phases of the Air Force Individual Qualification Course (AFIQC), and passing the performance evaluations.

1.2.2. **Recurring Training--12 Month**. This is qualification training after initial qualification. It consists of classroom instruction, qualification on the required evaluation phases of the recurring individual qualification course (full distance or 10 meter), and passing the performance evaluations. Personnel should fire the 10-meter course only if full distance ranges are unavailable. Evaluation is mandatory on an annual basis for individual machine gunners.

1.2.3. **Recurring Training--6 Month.** This is weapon operator skill recertification training. This training consists of classroom instruction and passing the performance evaluations. Evaluation is mandatory 6 months after initial and 12-month recurring training.

1.2.4. **Initial Crew-Served Machine Gunner Qualification.** This is the trainee's first participation in the M60 Crew-Served Qualification Training Program. Initial training consists of classroom instruction, qualification on the required evaluation phases of the Air Force Crew-served Qualification Course (AFC-SQC), and passing the performance evaluations

1.2.5. **Recertification Training--36 Month.** This is qualification training after initial qualification. It consists of classroom instruction, qualification on the AFC-SQC, and passing the performance evaluations. Evaluation is mandatory every 36 months for crew-served personnel.

1.2.6. **Recurring Training--12 Month.** This is qualification training after initial/recertification qualification. It consists of classroom instruction, qualification on the required phases of the recurring AFC-SQC (full distance or 10 meter), and passing the performance evaluations. Personnel should fire the 10-meter course only if full distance ranges are unavailable. Evaluation is mandatory on an annual basis for crew-served personnel.

1.2.7. **Recurring Training--6 Month.** This is weapon operator skill recertification training. It consists of classroom instruction and passing the performance evaluations. Evaluation is mandatory 6 months after initial/recertification and 12-month recurring training.

1.2.8. **Remedial Training.** This is the minimum training needed to correct deficiencies causing an individual to fail an evaluation.

1.2.9. **Performance Evaluation.** Performance evaluations consist of weapon operator skills certification. Evaluation is mandatory during initial, 36-month recertification, 12-month recurring, and 6-month recurring training for individual and crew-served personnel.

1.2.10. **Unit Training.** Refresher training on operator skills and knowledge provided by units to help maintain the gunner's proficiency. Units should conduct this training before exercises and deployments.

1.3. Instructor Guidelines and Ratios:

1.3.1. **Classroom.** Instructors will help trainees during portions of training requiring physical handling of weapons. Ratio: one instructor per 10 trainees. This ratio does not include the lead instructor. They will supervise and evaluate trainees during performance evaluations. Ratio: one instructor per weapon. They will supervise, evaluate, and assist trainees during operator maintenance (care and cleaning). Ratio: one instructor per 10 trainees.

1.3.2. **Range**. Instructors will supervise, assist, coach, and teach during prefire set-up, practice, and evaluation orders of fire, as needed. Ratio: one instructor per weapon and one instructor as tower operator and/or line supervisor.

1.4. M60 Machine Gun Qualification Plan of Instruction. The plan in Table 1.1 is intended to provide instruction standardization. This program is mandatory for the initial qualification course, recertification, and recurring training. Remedial training is in-depth, concentrating on known problems. Trainees must meet and be evaluated to the performance standards of these training objectives. **NOTE:** Training times will vary depending on class size, trainee experience level, range location, etc.

Table 1.1. Training Requirements.

RULE	A	B	C	D	E
	If member is receiving	and training time is	with total rounds of	then member must qualify on	
				M60 Individual Machine Gunner	M60 Crew- served Machine Gunner
1	Initial Training Qualification	15 - 19 Hours	700	X	
		40 - 48 Hours	1900		X
2	6-month Recurring Training	3 - 6 Hours	None	X	
		3 - 6 Hours	None		X
3	12-month Recurring Training	9 - 14 Hours	600 (full distance)	X	
			600 (10 meter)		
		12 - 17 Hours	1300 (full distance)		X
			1124 (10 meter)		
4	36-month Recertification Training	15 - 19 Hour	700	X	
		40 - 48 Hours	1900		X
5	Remedial	As required	As required	X	X

1.5. Training Goal. The training goal is to instill confidence in the trainee to develop and maintain the capability to use the M60 against enemy targets and maintain the weapon to the level authorized for the operator. With the exception of operator maintenance, trainees must perform all evaluated tasks without assistance.

1.6. Training Objectives. The training objectives required for successful completion of this program are listed in table

1.6.1. **Information Training Objectives. Trainee must be familiar with:**

- Safety rules and procedures.
- Characteristics, nomenclature, and types of ammunition.
- Methods of destruction.
- Stoppages and malfunctions.
- Roles of the M60.
- Classes of fire and types of targets.
- Range determination.
- Applying overhead fire.
- Zeroing the rear sight.
- Sight adjustments.
- Adjusted aiming point method.
- Alternate methods of laying the gun.

Table 1.2. Training Objectives/Intermediate Training Objectives (ITO).

	Objective	Condition	Standard
		Given a:	
1.	Operate M60.	M60 with dummy ammunition.	Operate M60.
ITO			
1.1	Perform Clearing procedures.	M60.	Clear M60.
1.2	Half-load & clear from half -load	M60 and dummy ammunition.	Half-load M60 and clear from half- load.
1.3	Full-load and clear from full-load.	M60 and dummy ammunition.	Full-load M60 and clear from full- load.
1.4	Immediate action procedures.	M60 and dummy ammunition.	Perform immediate action on M60.
1.5	Preventative maintenance inspection.	M60.	Perform a preventative maintenance (prefire) inspection on M60.
1.6	Zero and attach traversing and elevating (T&E) mechanism.	M60 and M122 tripod.	Zero and attach T&E mechanism to M60 and M122 tripod.
1.7	Mount M60 on M122 tripod.	M60 and M122 tripod.	Mount M60 on M122 tripod.
1.8	Mount M60 on a vehicle mount.	M60 and M142 or MK64 mount.	Mount M60 on M142 or MK64.
1.9	Place M60 into action.	M60.	Place M60 into action.
1.10	Conduct barrel change.	M60.	Conduct a barrel change on M60.
1.11	Take M60 out of action.	M60.	Take M60 out of action.
1.12	Install and remove blank firing attachment.	M60 and M13 blank firing attachment.	Install and remove M13 blank firing attachment.
1.13	Install and remove night vision sight.	M60 and AN/PVS-4.	Install and remove AN/PVS-4 night sight on M60.
2.	Performance evaluation.	M60.	Successfully complete all phases of performance evaluation within prescribed time limits.
3.	Demonstrate effective techniques of fire.	M60.	Fire M60 with sufficient accuracy to hit targets within range and capabilities of M60 and qualify on appropriate live-fire orders.
ITO			
3.1	Apply proper techniques of firing M60 during periods of good visibility.	M60 with required ammunition and equipment and a firing range with sufficient target distance.	Qualify on appropriate good visibility course of fire.
3.2	Apply proper techniques of firing M60 during periods of limited visibility.	M60 with required ammunition and equipment and a firing range with sufficient target distances.	Qualify on appropriate limited visibility course of fire.

Table 1.2. Continued.

	Objective	Condition	Standard
		Given a:	
3.3	Prepare range cards.	M60 with required ammunition and equipment and a firing range of sufficient target distances.	Prepare a range card and qualify on course of fire.
3.3	Apply proper techniques of firing M60 while wearing Chemical Warfare Defense Ensemble (CWDE) mask and gloves.	M60 with required ammunition and equipment and a firing range of sufficient target distances.	Qualify on appropriate course of fire while wearing CWDE mask and gloves.
3.4	Apply proper techniques of firing M60 while using night vision sight	M60 with required ammunition and equipment and a firing range of sufficient target distances.	Qualify on appropriate course of fire while using AN/PVS-4 night vision sight.
4.	Perform operator maintenance.	M60 with required equipment and equipment cleaning and lubricating supplies.	Clean, inspect, and lubricate M60 and required
ITO			
4.1	Disassemble M60.	M60 and required equipment.	Disassemble M60 to authorized level.
4.2	Clean, inspect, and lubricate M60.	Disassembled M60, required equipment, and lubricating supplies.	Clean, inspect, and lubricate M60 and required equipment.
4.3	Assemble M60.	M60.	Assemble M60.
4.4	Function check M60.	M60 and dummy ammunition.	Function check M60.

1.7. Recommended Sequence of Events for Individual Qualification:

1.7.1. **First Period--Orientation and Mechanical Training.** About 5 hours are needed for initial training, 3 hours for 12-month and 6-month recurring training.

- Prepare all required forms and documents.
- Discuss:
- M60 weapons safety.
- M60 general description and characteristics.
- M60 general nomenclature.
- Methods used to destroy the M60 to prevent its use by the enemy.
- Types of ammunition and how to care for, handle, and preserve ammunition for the M60.
- Stoppages, immediate action, and remedial action.

Explain, demonstrate, and conduct practical exercises on:

- Immediate action procedures.
- Clearing of the M60.
- Disassembling, assembling, and functionally checking the M60.
- Caring for, cleaning, and lubricating the M60.
- Installing and removing the M13 blank firing attachment and discuss how to care for the M60 while using blank firing attachments.
- Loading (half-load and full-load), unloading, reloading, and clearing the M60.
- Conducting a prefiring inspection of the M60 and equipment.
- Mounting and removing the M60 using vehicle mounts.

1.7.2. **Second Period--Effective Techniques of Fire.** About 5 hours are needed for initial training and 2 hours for 12-month recurring training.

- Discuss:
- M60 roles.
- M60 characteristics of fire.
- M60 classes of fire.
- Principles of fire and types of targets to be engaged by an M60.
- The technique of engaging visible targets during periods of limited visibility to include types of targets, fire control, and target engagement.
- Explain, demonstrate, and conduct practical exercises on range determination and lateral distance measurement.

1.7.3. **Third Period--Preparatory Marksmanship.** About 1 hour is needed for initial and 12-month recurring training.

Explain, demonstrate, and conduct practical exercises on:

- Assuming proper firing positions and establishing a proper grip.

- The proper techniques of firing while wearing CWDE mask and gloves.

Discuss principles of:

- Aiming.
- Proper trigger manipulation.
- How to zero the rear sight and the adjusted aiming point method of fire adjustment.
- Discuss target analysis and common errors encountered in machine gun marksmanship.
- Explain and demonstrate how to make sight adjustments.

1.7.4. **Fourth Period--Performance Evaluation.** About 1 hour is needed for initial training, 12-month recurring and 6-month recurring training.

- Prepare performance evaluation forms.
- Brief students on evaluation criteria.
- Set up weapons and equipment.
- Conduct performance evaluation on:
- Clearing.
- Half-loading.
- Firing from the half-load.
- Clearing from the half-load.
- Full-loading.
- Clearing from the full-load.
- Disassembly into eight major groups.
- Assembling.
- Function check.
- Immediate action procedures.

1.7.5. **Fifth Period--Live Fire and Operator Maintenance Evaluation.** About 3 hours are needed for initial training and 3 hours for 12-month recurring training.

- Discuss range procedures and safety requirements for live firing.
- Review all factors of obtaining an accurate initial burst.
- Review immediate action procedures.
- Conduct exercises in assuming firing positions.
- Fire qualification course.
- Evaluate trainee's proficiency in operator maintenance and function check procedures.
- Trainees must correctly perform the function check.
- Provide either immediate remedial training for those trainees who fail to qualify or demonstrate required proficiency in operator maintenance or notify unit training sections of the status of individuals who fail.
- Complete applicable blocks on the AF Forms 522 and 710.

1.8. Recommended Sequence of Events for Crew-Served Qualification:

1.8.1. **First Period--Orientation and Mechanical Training.** About 15 hours are needed for initial training, 2 hours for 12-month recurring and 3 hours for 6-month recurring training.

- Prepare all required forms and documents.

Discuss:

- M60 weapons safety.
- M60 general description and characteristics.
- M60 general nomenclature.
- M122 tripod and traversing and elevating
- (T&E) mechanism general description and nomenclature
- Methods and procedures used to destroy the M60 to prevent its use by the enemy.
- Types of ammunition and how to care for, handle, and preserve ammunition for the M60.
- Stoppages, immediate action, and remedial action.

Explain, demonstrate, and conduct practical exercises on:

- Immediate action practical exercises.
- Clearing of the M60.
- Disassembling the M60.
- Assembling the M60.
- Functionally checking the M60.
- Caring for, cleaning, and lubricating the M60 and its equipment.
- Mounting the M60 and zeroing, attaching, and operating the T&E mechanism.
- Installing and removing the M13 blank firing attachment and discuss how to care for the M60 while using blank firing attachments.
- Loading (half-load, full-load), unloading, reloading, and clearing the M60.
- Mounting night vision sights.
- Conducting barrel changes.
- Conducting a prefiring inspection of the M60 and equipment.
- Placing the M60 into action.
- Mounting and removing the M60 using vehicle mounts.

1.8.2. **Second Period--Effective Techniques of Fire.** About 5 hours are needed for initial training and 2 hours for 12-month recurring training.

Discuss:

- M60 roles.
- M60 characteristics of fire.
- M60 classes of fire.
- Characteristics of overhead fire.
- Principles of fire and types of targets to be engaged by the M60.
- The technique of engaging visible targets during periods of limited visibility to include types of targets, fire control, and target engagement.
- Techniques of delivering preplanned fire during periods of limited visibility to include grazing fire, fire control, and methods of laying the gun.
- Techniques of predetermined fires to include final protective line, principal direction of fire, dead

space, reading the T&E mechanism, and field expedient method of laying the gun.
- The general description and nomenclature of the AN/PVS-4 night vision device.

Explain, demonstrate, and conduct practical exercises on:
- Range determination and lateral distance measurement.
- Preparing range cards.
- Zeroing the AN/PVS-4 night vision device.
- Using the AN/PVS-4 night vision device for sighting, aiming, and estimating range.

1.8.3. **Third Period--Preparatory Marksmanship.** About 3 hours are needed for initial training and 1 hour for 12-month recurring training.

Explain, demonstrate, and conduct practical exercises in:
- Assuming proper firing positions
- Establishing a proper grip.
- Proper techniques of firing while wearing CWDE mask and gloves.
- Explain and demonstrate how sight adjustments are made.

Discuss:
- Principles of aiming, proper trigger manipulation, and target engagement with the M60 from a stationary and moving vehicle.
- Principles on how to zero the rear sight.
- The adjusted aiming point method of fire adjustment.
- Target analysis and common errors encountered in machine gun marksmanship.

1.8.4. **Fourth Period--Performance Evaluation.** About 3 hours are needed for initial training, 1 hour for 12-month recurring and 6-month recurring training.
- Prepare performance evaluation forms.
- Brief students on evaluation criteria.
- Set up weapons and equipment.
- Conduct performance evaluation on:
- Clearing.
- Half-loading.
- Firing from the half-load.
- Clearing from the half-load.
- Full-loading.
- Clearing from the full-load.
- Barrel change.
- Disassembly into eight major groups.
- Assembly.
- Function check.
- Immediate action procedures.
- Mounting the M60 on a tripod.
- Reading a range card and setting T&E data.

1.8.5. **Fifth Period--Live Fire and Operator Maintenance Evaluation.** About 17 hours are needed for initial training and 7 hours for 12-month recurring training.
- Discuss range procedures and safety requirements for live firing.
- Review all factors of obtaining an accurate initial burst.
- Review immediate action procedures.
- Conduct exercises in assuming firing positions.
- Fire qualification course.
- Evaluate trainee's proficiency in operator maintenance and function check procedures.
- Trainees must correctly perform the function check.
- Provide either immediate remedial training for those trainees who fail to qualify or demonstrate required proficiency in operator maintenance or notify unit training sections of the status of individuals who fail.
- Complete applicable blocks on the AF Forms 522 and 710.

1.9. Administrative Requirements:

1.9.1. **Reference Material:**
- AFI 36-2226, The Air Force Combat Arms Training and Maintenance (CATM) Program.
- AFMAN 36-2227, Volumes 1 and 2, Combat Arms Training and Maintenance (CATM) Training Management and Range Operations, Combat Arms Training and Maintenance Rifle, Handgun, Shotgun, Grenade Launcher, M72 Light Antitank Weapon, Submachine Gun, and M249 Squad Automatic Weapon Training Programs.
- T.O. 11W2-6-4-11, M60 Machine Gun, 7.62mm and T.O. 11W2-6-4-12, M60 Machine Gun, 7.62mm.
- US Army FM 23-67, Machine Gun, 7.62mm, M60.

1.9.2. **Facilities Needed:**
- Classroom equipped with chalkboard, tables, and chairs.
- Area to conduct practical exercises in assuming firing positions.
- Firing range with target line at 10 meters.
- Full distance range.
- Vehicle fire range.
- Area for weapons cleaning.

1.9.3. **Training Aids and Equipment:**
- M60 with spare barrel kit, one for each two trainees.
- M122 tripod and T&E mechanism, one for each M60.
- M142 or MK64 gun mount, as required.
- Night vision device, one for each M60.
- M13 blank firing attachment.
- Bandoleer (assault pack) loaded with dummy 7.62mm linked ammunition, one per M60.
- Empty ammo can and empty ammo case.

- Care and cleaning equipment, as required by T.O. 11W1-12-8-41, *Operator's Manual, Machine Gun, 7.62mm M60, and 122 Tripod.*
- Performance evaluation forms.
- Helmet with liner and flak vest.
- CWDE mask and gloves.
- Blank range cards.
- Vehicles designated as M60 firing platform.
- Targets, as required.
- Illumination as required for night fire.
- Public address system.
- Sound suppressors or ear plugs for instructors and trainees.
- Eye protection for instructors and trainees.

1.9.4. **Ammunition Needed.** Cartridge 7.62mm linked (quantity and type required to complete applicable course of fire).

1.9.5. **Documents Needed:**

- AF Forms 522, US Air Force Ground Weapons Training Data and 710, Ground Weapons Training Record.
- Performance evaluation forms.

Figure 1.1. M60 Machine Gun Firing Requirements, Air Force Individual Qualification Course.

Order Number and Target Description	Ammunition and Fire Control	Type Load	Time	No. of Targets Engaged	Required No. of Target Hits (Qualify)
Phase I: Instruction and Practice					
1. Zeroing. 10M MG Target Pasters A1 and A2	6 (3 single rounds A1, 3 single rounds A2) 4:1 or ball.	Full	N/A	2	N/A
2. Point Targets. Pasters A5 and A6	18 (6 to 9 rd burst) 4:1 or ball.	Half	N/A	2	N/A
3. Linear Targets with Depth. Section A	100 (6 to 9 rd burst) 4:1 or ball. 124 Total Rounds (Practice)	Half	N/A	8	N/A
Phase II: Evaluation					
1. Linear Targets with Depth and Deep Targets. Section B	176 (6 to 9 rd burst) 4:1 or ball.	Half	3 min 30 sec	13	1 hit per target
2. Point Targets C5 and C6 and Linear Targets with Depth.	100 (6 to 9 rd burst per target) 4:1 or ball.	Half	3 min	10	1 hit per target
3. Zeroing. 500M	12 (6 to 9 rd burst) 4:1 or ball.	Full	N/A	1	N/A
4. Linear Targets with Depth. 300-800M	88 (6 to 9 rd burst) 4:1 or ball.	Half	2 min	8	5
5. Stationary Vehicle. Area Target, 300M.	100 (6 to 9 rd burst) 4:1 or ball.	Half	N/A	1	5
6. Moving Vehicle. Area target, 300M.	100 (6 to 9 rd burst) 4:1 or ball. 576 Total Rounds (Evaluation) 700 Total Rounds for Course	Full	N/A	1	2

1.10. Course Information: Individual Qualification:

1.10.1. **Targets for the Course.** Use the 10-meter machine gun target (NSN 6920-00-078-5123) for 10-meter firing. Double "E" silhouette targets or empty 55-gallon drums may be used to represent personnel for 300 to 800 meter firing.

1.10.2. **Standards:**

- On Phase II, Orders 1 and 2, all targets must have at least one hit each. Initial lay on the linear target with depth is midpoint. The gunner then traverses and searches to the near flank (left), back to the far flank (right), and then back to midpoint. Initial lay on the
- deep target is also midpoint. The gunner then searches down to the near end, up to the far end, and then back to the midpoint.
- On Phase II, Orders 4, 5, and 6, if beaten zone covers target, it is considered a hit. Gunner must have at least five bursts on target area from stationary position and two bursts on target area while moving.

1.10.3. **Course Notes:**

- Instructors are to teach trainees, as needed, during the practice phase. During evaluation phases, instructors will help trainees between orders of fire as needed, correct safety infractions, and supervise how trainees apply immediate action procedures. For 10-meter firing, one bullet hole per target is considered a hit.
- Trainees are to wear helmets with liners, flak vest, and hearing protection during all firing orders.
- Sight corrections may be made at any time during the course.
- All orders in Phase I and Phase II, Orders 1, 2, 3, and 4 are fired in the bipod mode.
- On Phase II, Order 1, the gunner will use a 76-round belt for the deep target and a 100-round belt for the linear with depth target.
- Gunners will fire Phase II, Order 3, on a full distance range.
- When possible, trainees should fire 4:1 ball/tracer mix.
- On all orders, gunners will engage targets as a single gun covering the entire target array.
- On Phase II, Orders 5 and 6, gunners should use one area target at 300 meters, with at least four double "E" silhouettes or 55-gallon drums. Position the vehicle parallel to the firing line with the weapon pointed down range (perpendicular to the vehicle). When conducting moving vehicle firing, vehicle should move parallel to the firing line from 3 to 5 miles per hour (mi/h). Implementation of vehicle firing is a MAJCOM option.
- Should gunners fail to achieve a qualified score on any order, they are unqualified. However, gunners need only to refire and qualify on those orders failed.
- AF Form 522 need only reflect qualified "Q" or unqualified "UQ" for the entire course. A numerical score is not required in the score block of AF Forms 522 or 710.

Figure 1.2. M60 Machine Gun Firing Requirements, 12-month Recurring Individual Air Force Qualification Course (Full Distance).

Order Number and Target Description	Ammunition and Fire Control	Type Load	Time	No. of Targets Engaged	Required No. of Target Hits (Qualify)
Phase I: Instruction and Practice					
1. Zeroing. 500M	24 (6 to 9 rd burst) 4:1 or ball.	Full	N/A	1	N/A
2. Point Targets. 500M	24 (6 to 9 rd burst) 4:1 or ball.	Half	N/A	2	N/A
3. Linear Targets with Depth. 300-800M	76 (6 to 9 rd burst) 4:1 or ball.	Half	N/A	8	N/A
	124 Total Rounds (Practice)				

Figure 1.2. Continued.

Order Number and Target Description	Ammunition and Fire Control	Type Load	Time	No. of Targets Engaged	Required No. of Target Hits (Qualify)
Phase II: Evaluation					
1. Linear Targets with Depth and Deep Targets. 300-800M	176 (6 to 9 rd	Half burst) 4:1 or ball.	3 min30 sec	13	10
2. Point Targets and Area Targets. (CWDE) 300-800M	100 (6 to 9 rd burst) 4:1 or ball.	Half	3 min	10	7
276 Total Rounds (Evaluation)					
Phase III: Evaluation--Vehicle Firing (Optional)					
1. Stationary Vehicle. Area Target, 300M.	100 (6 to 9 rd burst) 4:1 or ball.	Half	N/A	1	5
2. Moving vehicle Area target, 300M	100 (6 to 9 rd burst) 4:1 or ball.	Full	N/A	1	2
	200 Total Rounds (Vehicle Firing--Optional)				
	600 Total Rounds for Course				

1.11. Course Information: 12-month Recurring Individual:

1.11.1. **Targets for the Course.** Double "E" silhouette targets, empty 55-gallon drums, salvaged vehicles, or mounds of earth can be used to represent personnel and vehicle targets.

1.11.2. **Standards:**

- On Phase II, Order 1, if beaten zone covers the target, it is considered a hit. Gunner must hit at least 10 targets. Initial lay on the linear target with depth is midpoint. The gunner then traverses and searches to the near flank (left), back to the far flank (right), and then back to the midpoint. Initial lay on the deep target is also midpoint. The gunner then searches down to the near end, up to the far end, and then back to the midpoint.
- On Phase II, Order 2, if beaten zone covers the target, it is considered a hit. Gunner must hit at least seven targets.
- On Phase III, Orders 1 and 2, if beaten zone covers the target, it is considered a hit. Gunner must have at least five bursts on target area from stationary position and two bursts on target area while moving.

1.11.3. **Course Notes:**

- Instructors are to teach trainees as needed during the practice phase. During evaluation phases, instructors will help trainees between orders of fire, as needed, correct safety infractions and supervise how trainees apply immediate action procedures.
- Assistant gunners will not be used. The gunner must wear a helmet with liner, flak vest, and hearing protection during all firing orders. The gunner must also have the protective mask and gloves on his or her person during the entire course.
- Sight corrections may be made at any time throughout the course.
- When possible, trainees should fire 4:1 ball/tracer mix.
- All orders in Phases I and II are fired in the bipod

mode.

- On Phase II, Order 1, the gunner will use a 76-round belt for the deep target and the 100-round belt for the linear with depth target.
- On all orders, gunners will engage targets as a single gun covering the entire target.
- After engaging both point targets on Phase II, Order 2, the gunner will immediately put the gun on safe and don the protective mask and gloves. Gunner will then engage the linear target with depth.
- Phase III is optional to fill mission training needs. Implementation of this phase is at the discretion of MAJCOMs and local commanders.
- In Phase III, gunners should use one area target at 300 meters with at least four double "E" silhouettes or 55-gallon drums. Position the vehicle parallel to the firing line with the weapon pointed down range (perpendicular to the vehicle). When conducting moving vehicle firing, the vehicle should move parallel to the firing line from 3 to 5 mi/h.
- Should gunners fail to achieve a qualified score on any order, they are unqualified. However, gunners need only to refire and qualify on those orders failed.
- AF Form 522 need only reflect qualified "Q" or unqualified "UQ" for the entire course. A numerical score is not required in the score block of AF Forms 522 or 710.

Figure 1.3. M60 Machine Gun Firing Requirements, 12-month Recurring Individual Air Force Qualification Course (10 Meter) vehicle targets for Phase III.

Order Number and Target Description	**Ammunition and Fire Control**	**Type Load**	**Time**	**No. of Targets Engaged**	**Required No. of Target Hits (Qualify)**
Phase I: Instruction and Practice					
1. Zeroing. 10M MG Target Pasters A1 and A2	6 (3 single rounds A1, 3 single rounds A2) 4:1 or ball.	Full	N/A	2	N/A
2. Point Targets. Pasters A5 and A6	18 (6 to 9 rd burst) 4:1 or ball.	Half	N/A	2	N/A
3. Linear Targets with Depth. Section A	100 (6 to 9 rd burst per target) 4:1 or ball. 124 Total Rounds (Practice)	Half	N/A	8	N/A
Phase II: Evaluation					
1. Linear Targets with Depth and Deep Targets. Section B	176 (6 to 9 rd burst per target) 4:1 or ball.	Half	3 min 30 sec	13	1 hit per target
2. Point Targets C5 and C6 and Deep Targets. Section C (CWDE)	100 (6 to 9 rd burst per target) 4:1 or ball. 276 Total Rounds (Evaluation)	Half	3 min	10	1 hit per target

Figure 1.3. Continued.

Order Number and Target Description	Ammunition and Fire Control	Type Load	Time	No. of Targets Engaged	Required No. of Target Hits (Qualify)
Phase III: Evaluation--Vehicle Firing (Optional)					
1. Stationary Vehicle. Area Target, 300M.	100 (6 to 9 rd burst) Blank	Half	N/A	1	5
2. Moving vehicle. Area target, 300M	100 (6 to 9 rd burst) Blank	Full	N/A	1	2
	200 Total Rounds (Vehicle Firing--Optional) 600 Total Rounds for Course				

1.12. Course Information: 12-month Recurring Individual, 10 Meter:

1.12.1. **Targets for the Course.** Use the 10-meter machine gun target for Phases I and II (NSN 6920-00-078-5123). Double "E" silhouette targets, empty 55-gallon drums, salvaged vehicles, or mounds of earth can be used to represent personnel and vehicle targets.

1.12.2. **Standards:**

- On Phase II, Orders 1 and 2, all targets must have at least one hit each. Initial lay on the linear target with depth is midpoint. The gunner then traverses and searches to the near flank (left), back to the far flank (right), and then back to the midpoint. Initial lay on the deep target is also midpoint. The gunner then searches down to the near end, up to the far end, and then back to the midpoint.
- On Phase III, Orders 1 and 2, if beaten zone covers target, it is considered a hit. Gunner must have at least five bursts on target area from stationary position and two bursts on target area while moving.

1.12.3. **Course Notes:**

- Instructors are to teach trainees as needed during the practice phase. During evaluation phases, instructors will help trainees between orders of fire, as needed, correct safety infractions, and supervise how trainees apply immediate action procedures.
- Assistant gunners will not be used. The gunner must wear a helmet with liner, flak vest, and hearing protection during all firing orders. The gunner must also have the protective mask and gloves on his or her person during the entire course.
- Sight corrections may be made at any time throughout the course.
- All orders in Phases I and II are fired in the bipod mode.
- On Phase II, Order 1, the gunner will use a 76-round belt for the deep target and a 100-round belt for the linear with depth target.
- In Phase II, gunners will engage targets as a single gun covering the entire target.
- After engaging both point targets in Phase II, Order 2, the gunner will immediately put the gun on safe and don the protective mask and gloves. Gunner will then engage the deep target.
- Phase III is optional to fill mission training needs. Implementation of this phase is at the discretion of MAJCOMs and local commanders.
- Conduct Phase III vehicle firing using blank ammunition and the Multiple Integrated Laser Engagement System (MILES) equipped weapons and targets. Use one area target at 300 meters, with at least four double "E" silhouettes or 55-gallon drums. Hang MILES harnesses over the targets or drums. Position the vehicle parallel to the firing line with the weapon pointing down range (perpendicular to the vehicle). An instructor must be down range in the target area with a MILES reset key and radio. The instructor indicates target hits and resets MILES harnesses for each gunner. When conducting moving vehicle firing, the vehicle should move parallel to the firing line from 3 to 5 mi/h.
- Should gunners fail to achieve a qualified score on any order, they are unqualified. However, gunners need only to refire and qualify on those orders failed.
- AF Form 522 need only reflect qualified "Q" or unqualified "UQ" for the entire course. A numerical score is not required in the score block of AF Forms 522 or 710.

Figure 1.4. M60 Machine Gun Firing Requirements, Crew-served Air Force Qualification Course.

Order Number and Target Description	Ammunition and Fire Control	Type Load	Time	No. of Targets Engaged	Required No. of Target Hits (Qualify)
Phase I: Instruction and Practice--Bipod					
1. Zeroing. 500M	24 (6 to 9 rd burst) 4:1 or ball.	Full	N/A	1	N/A
2. Deep Targets. 300-800M	76 (6 to 9 rd burst) 4:1 or ball.	Half	N/A	5	N/A
3. Point Targets and Area Targets. (CWDE) 300-1100M	100 (6 to 9 rd burst) 4:1 or ball. Barrel change after last burst.	Half	N/A	10	N/A
4. Linear Targets with Depth. 300-800M	100 (6 to 9 rd burst) 4:1 or ball. Barrel change after last burst.	Half	N/A	8	N/A
	300 Total Rounds (Practice)				
Phase II: Evaluation--Bipod Firing					
1. Deep Targets. 300-800M	100 (6 to 9 rd burst) 4:1 or ball.	Half	2 min	5	3
2. Point Targets and Area Targets. (CWDE) 300-1100M	100 (6 to 9 rd burst) 4:1 or ball. Barrel change after last burst.	Half	3 min15 sec Includes Barrel Change	10	5
3. Linear Targets with Depth. 300-800M	100 (6 to 9 rd burst) 4:1 or ball. Barrel change after last burst.	Half	3 min45 sec Includes Barrel Change	8	5
	300 Total Rounds (Bipod Firing)				

Figure 1.4. Continued.

Order Number and Target Description	Ammunition and Fire Control	Type Load	Time	No. of Targets Engaged	Required No. of Target Hits (Qualify)
Phase III: Instruction and Practice--Tripod					
1. Zeroing. 500M	24 (6 to 9 rd burst) 4:1 or ball.	Full	N/A	1	N/A
2. Point Targets and Area Targets. (CWDE) 300-1100M	100 (6 to 9 rd burst) 4:1 or ball. Barrel change after last burst.	Half	N/A	10	N/A
3. Linear Targets with Depth and Deep Targets. 300-800M	176 (6 to 9 rd burst) 4:1 or ball. Barrel change after last burst.	Half	N/A	13	N/A
	300 Total Rounds (Practice--Tripod)				
Phase IV: Evaluation--Tripod					
1. Linear Targets with Depth and Deep Targets. 300-800M	176 (6 to 9 rd burst) 4:1 or ball. Barrel change after last burst.	Half	3 min45 sec Includes Barrel Change	13	10
2. Point Targets and Area Targets. (CWDE) 300-800M	100 (6 to 9 rd burst) 4:1 or ball. Barrel change after last burst.	Half	3 min 15 sec Includes Barrel Change	10	7
3. Day Defensive. Linear with Depth and Deep Targets. 300-1100M	100 (6 to 9 rd burst) 4:1 or ball. Guns employed in pairs.	Half	1 min 30 sec	7	5
	376 Total Rounds (Evaluation--Tripod)				
Phase V: Evaluation--Vehicle Firing (Optional)					
1. Zeroing. 500M	24 (6 to 9 rd burst) 4:1 or ball.	Half	N/A	1	N/A

Figure 1.4. Continued.

Order Number and Target Description	Ammunition and Fire Control	Type Load	Time	No. of Targets Engaged	Required No. of Target Hits (Qualify)
2. Stationary Vehicle. Area Target, 300M.	100 (6 to 9 rd burst) 4:1 or ball.	Half	N/A	1	5
3. Moving Vehicle. Area target, 300M.	100 (6 to 9 rd burst) 4:1 or ball.	Full	N/A	1	2
	224 Total Rounds (Evaluation--Vehicle Firing)				
Phase VI: Practice--Predetermined Firing (Range Cards)					
DAY FIRE					
1. Predetermined Firing (range card) 300-800M.	100 (6 to 9 rd burst) Approx. 25 rds per target. 4:1 or ball.	Full	N/A	Obtain direction and elevation readings.	
Fire Missions: Target 1, FPL Target 2, linear target Target 3, area target Target 4, point target					
2. Night Sight. Zeroing 500M	30 (6 to 9 rd burst) 4:1 or ball.	Full	N/A	Zero using field expedient method.	
	130 Total Rounds (Practice--Predetermined Firing--Range Cards)				
Phase VII: Evaluation--Night Fire					
1. Night Sight. Area target, 500M	70 (6 to 9 rd burst) 4:1.	Half	N/A	2	2
2. Predetermined Firing (range card) 300-800M.	200 (50 rd belt for each fire mission) 4:1.	Half	N/A	4	4
Fire Missions: Target 2 Target 3 Target 1 Target 4					
	270 Total Rounds (Evaluation--Predetermined Firing--Range Cards) 1900 Total Rounds for Course				

1.13. Course Information: Initial Crew-Served Qualification Course:

1.13.1. **Targets for the Course:**

- Double "E" silhouette targets, empty 55-gallon drums, salvaged vehicles, or mounds of earth can be used to represent personnel and vehicle targets.
- Deep targets should have minimum of five targets.
- Point targets should consist of two separated, vehicle-type targets and area target should consist of two separated groups of four personnel-type targets.
- Linear with depth targets should consist of eight double "E" targets or paired 55-gallon drums.
- In Phase V, Orders 2 and 3, trainees will use one area target at 300 meters with at least four double "E" silhouettes or 55-gallon drums.

1.13.2. **Standards:**

- On Phase II, Order 1, if the beaten zone covers the target area, it is considered a hit. Gunner must hit at least three targets.
- On Phase II, Orders 2 and 3, if the beaten zone covers the target area, it is considered a hit. Gunner must hit at least five targets.
- On Phase IV, Order 1, if the beaten zone covers the target area, it is considered a hit. Gunner must hit at least 10 targets.
- On Phase IV, Order 2, if the beaten zone covers the target area, it is considered a hit. Gunner must hit at least seven targets.
- On Phases II and IV, Orders 1 and 3, initial lay on the linear target with depth is midpoint. The gunner then traverses and searches to the near flank (left), back to the far flank (right), and then back to the midpoint. Initial lay on the deep target is also midpoint. The gunner then searches down to the near end, up to the far end, and then back to the midpoint.
- On Phase V, Orders 2 and 3, if beaten zone covers target, it is considered a hit. Gunner must have at least five bursts on target area from stationary position and two bursts on target while moving.
- On Phase VII, Order 1, if beaten zone covers target, it is considered a hit. Gunner must hit two targets.
- On Phase VII, Order 2, if beaten zone covers target, it is considered a hit. Gunner must hit four targets.

1.13.3. **Course Notes:**

- Instructors are to teach trainees, as needed, during the practice phase. During evaluation phases, instructors will help trainees between orders of fire, as needed, correct safety infractions, and supervise how trainees apply immediate action procedures.
- An assistant gunner will be used for all orders of fire. Instructors should emphasize the importance of teamwork. Except for zeroing, assistant gunners will give all fire corrections to the gunners. Ensure trainees are equipped with the appropriate tripod, T&E mechanism, and spare barrel kit. Gun crews will wear helmets with liners, flak vest, and hearing protection during all firing orders. Both the gunner and assistant gunner must have the protective mask and gloves on their person during the entire course.
- When possible, trainees should fire 4:1 ball/tracer mix.
- Sight corrections and or T&E adjustments may be made at any time throughout the course.
- All orders must be fired on full-distance ranges.
- Gunners will engage targets as a single gun covering the entire target.
- After engaging both point targets in orders requiring CWDE, the gun crew will immediately put the gun on safe and don their protective mask and gloves. They will then engage both area targets. Gun crew will perform barrel change while wearing protective masks and gloves. Assistant gunners must still use the protective mitten during barrel changes. The gunner is allowed a maximum of three burst at each target.
- On Phase III, Order 3, and Phase IV, Order 1, the gunner will use a 76-round belt for the deep target and a 100-round belt for the linear with depth target.
- Phase IV, Order 3, evaluates day defensive techniques of employing machine guns in pairs and special division of targets. Two guns fire at the same target (linear with depth and deep) with each gun initially laying on the midpoint. Each gun will then traverse and/or traverse and search (Left gun: left or up. Right gun: right or down) ensuring complete target coverage.
- In Phase V, position the vehicle parallel to the firing line with the weapon pointed down range (perpendicular to the vehicle).
- When conducting moving vehicle firing, the vehicle should move parallel to the firing line from 3 to 5 mi/h.
- Phases VI and VII evaluate the gun crew's ability to prepare range cards and engage targets using range cards. On Phase VI, Order 1, they will use a 100-round belt during daytime to fire and obtain direction and elevation readings for the targets indicated. They will have 10 minutes to prepare field expedient range cards using bandoleer boxes, wooden spacers from ammo crates, etc., and complete this order. To ensure accuracy of range card readings, use the same gun, T&E

mechanism, and tripod for Phase VII, Order 2, as used for Phase VI, order 1. During Phase VII, Order 2, the gun crew will fire four fire missions using the range cards prepared during Phase VI, Order 1. The same firing techniques (position, grip, cheek and shoulder pressure) used for obtaining direction and elevation readings must also be used when firing using the range card. Do not conduct fire missions in numerical order.

- On Phase VII, Order 1, the gunner will fire using the night sight. Remove the night sight when this order is completed.
- Should gunners fail to achieve a qualifying score on any order, they are unqualified. However, gunners need only to refire and qualify on those orders failed.
- If Phase VII night fire cannot be conducted, it will be accomplished during the day.
- AF Form 522 need only reflect qualified "Q" or unqualified "UQ" for each firing phase. A numerical score is not required in the score block of AF Forms 522 or 710.

Figure 1.5. M60 Machine Gun Firing Requirements, 12-month Recurring Crew-served Air Force Qualification Course (Full Distance).

Order Number and Target Description	Ammunition and Fire Control	Type Load	Time	No. of Targets Engaged	Required No. of Target Hits (Qualify)
Phase I: Evaluation--Bipod Firing					
1. Zeroing. 500M	24 (6 to 9 rd burst) 4:1 or ball.	Full	N/A	1	N/A
2. Linear Targets with Depth and Deep Targets. 300-800M	176 (6 to 9 rd burst) 4:1 or ball. Barrel change after last burst.	Half	3 min45 sec Includes Barrel Change	13	10
3. Point Targets and Area Targets. 300-800M (CWDE)	100 (6 to 9 rd burst) 4:1 or ball. Barrel change after last burst.	Half	3 min15 sec Includes Barrel Change	10	7
	300 Total Rounds (Evaluation--Bipod Firing)				
Phase II: Evaluation--Tripod Firing					
1. Zeroing. 500M	24 (6 to 9 rd burst) 4:1 or ball.	Full	N/A	1	N/A
2. Linear Targets with Depth and Deep Targets. 300-800M	176 (6 to 9 rd burst) 4:1 or ball. Barrel change after last burst.	Half	3 min45 sec Includes Barrel Change	13	10
3. Point Targets and Area Targets. 300-800M (CWDE)	100 (6 to 9 rd burst) 4:1 or ball. Barrel change after last burst.	Half	3 min15 sec Includes Barrel Change	10	7

Figure 1.5. Continued.

Order Number and Target Description	Ammunition and Fire Control	Type Load	Time	No. of Targets Engaged	Required No. of Target Hits (Qualify)
4. Day Defensive. Linear with Depth and Deep Targets 300-1100M	100 (6 to 9 rd burst) 4:1 or ball. Guns employed in pairs.	Half	1 min 30 sec	7	5
	400 Total Rounds (Evaluation--Tripod Firing)				
Phase III: Evaluation--Vehicle Firing (Optional)					
1. Stationary Vehicle. Area Target, 300M.	100 (6 to 9 rd burst) 4:1 or ball.	Half	N/A	1	5
2. Moving Vehicle. Area target, 300M	100 (6 to 9 rd burst) 4:1 or ball.	Full	N/A	1	2
	200 Total Rounds (Evaluation--Vehicle Firing--Optional)				
Phase IV: Practice--Predetermined Firing (Range Cards)					
DAY FIRE					
1. Predetermined Firing (range card).	100 (6 to 9 rd burst) Approx. 25 rds per target. 4:1 or ball.	Full	N/A	Obtain direction and elevation readings.	
Fire Missions: Target 1, FPL Target 2, linear target Target 3, area target Target 4, point target					
2. Night Sight. Zeroing 500M	30 rds (6 to 9 rd burst) 4:1.	Full	N/A	Zero using field expedient method.	
	130 Total Rounds (Practice--Predetermined Firing--Range Cards)				
Phase V: Evaluation--Night Fire					
1. Night Sight. Area target. (500M)	70 (6 to 9 rd burst) 4:1 or ball.	Half	N/A	2	2
2. Predetermined Firing (range card).	200 (50 rd belt for each fire mission) 4:1 or ball.	Half	N/A	4	4
Fire Missions: Target 2 Target 3 Target 1 Target 4					
	270 Total Rounds (Evaluation--Predetermined Firing--Range Cards) 1300 Total Rounds for Course				

1.14. Course Information: 12-month Recurring Crew-served--Full Distance:

1.14.1. **Targets for the Course:**

- Double "E" silhouette targets, empty 55-gallon drums, salvaged vehicles or mounds of earth can be used to represent personnel and vehicle targets.
- In Phase I, Order 2, and Phase II, Order 2, use eight linear with depth targets and five deep targets.
- On Phase I, Order 3, and Phase II, Order 3, use two point and eight area targets.
- In Phase III, use one area target at 300 meters with at least four double "E" silhouettes or 55-gallon drums.

1.14.2. **Standards:**

- On Phase I, Order 2, if the beaten zone covers the target area, it is considered a hit. Gunner must hit at least 10 targets.
- On Phase I, Order 3, if the beaten zone covers the target area, it is considered a hit. Gunner must hit at least seven targets.
- On Phase II, Order 2, if the beaten zone covers the target area, it is considered a hit. Gunner must hit at least 10 targets.
- On Phase II, Order 3, if the beaten zone covers the target area, it is considered a hit. Gunner must hit at least seven targets.
- On Phase II, Order 4, if the beaten zone covers the target area, it is considered a hit. Two guns fire at the same target (linear with depth and deep) with each gun initially laying on the midpoint. Each gun will then traverse and/or traverse and search (Left gun: left or up. Right gun: right or down) ensuring complete target coverage. Gunner must hit at least 5 targets.
- On Phase I, Order 2, and Phase II, Orders 2 and 4, initial lay on the linear target with depth is midpoint. The gunner then traverses and searches to the near flank (left), back to the far flank (right), and then back to the midpoint. Initial lay on the deep target is also midpoint. The gunner then searches down to the near end, up to the far end, and then back to the midpoint.
- On Phase III, Orders 1 and 2, if the beaten zone covers the target area, it is considered a hit. Gunner must have at least five bursts on target area from stationary position and two bursts on target area while moving.
- On Phase V, Order 1, if the beaten zone covers the target area, it is considered a hit. Gunner must hit two targets.
- On Phase V, Order 2, if the beaten zone covers the target area, it is considered a hit. Gunner must hit four targets.

1.14.3. **Course Notes:**

- Instructors are to teach trainees, as needed, during the practice phase. During evaluation phases, instructors will help trainees between orders of fire, as needed, correct safety infractions, and supervise how trainees apply immediate action procedures.
- Assistant gunner will be used for all orders of fire. Emphasize the importance of teamwork. Except for zeroing, assistant gunners will give all fire corrections to the gunners. Ensure trainees are equipped with the appropriate tripod, T&E mechanism, and spare barrel kit. Gun crews will wear a helmet with liner, flak vest, and hearing protection during all firing orders. Both the gunner and assistant gunner must have the protective mask and gloves on their person during the entire course.
- Sight corrections and/or T&E adjustments may be made at any time throughout the course.
- All phases must be fired on full distance ranges.
- When possible, trainees should fire 4:1 ball/tracer mix.
- In Phase I, Order 2, and Phase II, Order 2, gunners will use a 76-round belt for the deep target and a 100- round belt for the linear with depth target.
- In the evaluation orders of Phases I and II, the gunner fires a maximum of two bursts at each target.
- In Phases I and II, Orders 2 and 3, gunners will engage targets as a single gun covering the entire target.
- After engaging both point targets in orders requiring CWDE, the gun crew will immediately put the gun on safe and don the protective mask and gloves. They will then engage the linear with depth target only and perform barrel change while wearing mask and gloves. Assistant gunners must still use the protective mitten during barrel changes.
- Phase II, Order 4, evaluates day defensive techniques of employing machine guns in pairs and special division of targets.
- Phase III is optional to fill mission training needs. Implementation of these phases is at the discretion of MAJCOMs and local commanders.
- In Phase III, position the vehicle parallel to the firing line with the weapon pointed down range (perpendicular to the vehicle).
- When conducting moving vehicle firing, vehicle should move parallel to the firing line from 3 to 5 mi/h.
- Phases IV and V evaluate the gun crew's ability to prepare range cards and engage targets using range cards. In Phase IV, they will use a 100-round belt during daytime to fire and obtain

direction and elevation readings for the targets indicated. They will have 10 minutes to prepare field expedient range cards using bandoleer boxes, wooden spacers from ammo crates, etc., and complete Order 1. To ensure accuracy of range card readings, use the same gun, T&E mechanism, and tripod for Phase V, Order 2, as used for Phase IV, Order 1. In Phase V, Order 2, the gun crew will fire four fire missions using the range cards prepared during Phase IV, Order 1. The same firing techniques (position, grip, cheek and shoulder pressure) used for obtaining direction and elevation readings must also be used when firing using the range card. Do not conduct fire missions in numerical order.

- In Phase IV, Order 2, the gunner will fire using the night sight. Remove the night sight when the gunner completes this order.
- Should gunner fail to achieve a qualified score on any order, they are unqualified. However, gunners need only to refire and qualify on those orders failed.
- If night fire cannot be conducted, Phase V will be accomplished during the day.
- AF Form 522 need only reflect qualified "Q" or unqualified "UQ" for each firing phase. A numerical score is not required in the score block of AF Forms 522 or 710.

Figure 1.6. M60 Machine Gun Firing Requirements, 12-month Recurring Crew-served Air Force Qualification Course (10 Meter).

Order Number and Target Description	Ammunition and Fire Control	Type Load	Time	No. of Targets Engaged	Required No. of Target Hits (Qualify)
Phase I: Evaluation--Bipod Firing					
1. Zeroing. 10M MG Target Pasters A1 and A2	6 (3 single rounds A1, 3 single rounds A2) 4:1 or ball.	Full	N/A	2	N/A
2. 10M Pasters A3 and A4	18 (6 to 9 rd burst) 4:1 or ball.	Full	N/A	2	N/A
3. Linear Targets with Depth and Deep Targets. Section A	176 (6 to 9 rd burst per target) 4:1 or ball. Barrel change after last burst.	Half	3 min45 secs Includes Barrel Change	13	1 hit per target
4. Point Targets B7 and B8 and Deep Targets Section B (CWDE)	100 (6 to 9 rd burst per target) 4:1 or ball. Barrel change after last burst.	Half	3 min15 secs Includes Barrel Change	7	1 hit per target
	300 Total Rounds (Evaluation--Bipod Firing)				
Phase II: Evaluation--Tripod Firing					
1. Zeroing. 10M MG Target Pasters C1 and C2	6 (3 single rounds C1, 3 single rounds C2) 4:1 or ball.	Full	N/A	2	N/A

Figure 1.6. Continued.

Order Number and Target Description	**Ammunition and Fire Control**	**Type Load**	**Time**	**No. of Targets Engaged**	**Required No. of Target Hits (Qualify)**
2. 10M Pasters C3 and C4	18 (6 to 9 rd burst) 4:1 or ball.	Full	N/A	2	N/A
3. Linear Targets with Depth and Deep Targets. Section C	176 (6 to 9 rd burst per target) 4:1 or ball. Barrel change after last burst.	Half	3 min45 sec Includes` Barrel Change	13	1 hit per target
4. Point Targets D7 and D8 and Deep Targets Section D (CWDE)	100 (6 to 9 rd burst per target) 4:1 or ball. Barrel change after last burst.	Half	3 min15 sec Includes Barrel Change	7	1 hit per target
5. Day Defensive. Guns Employed in Pairs. Linear Targets with Depth and Deep Targets. Section A	100 (6 to 9 rd burst per target) 4:1 or ball.	Half	1 min30 sec	7	1 hit per target
6. Predetermined Firing (range card). 10M Paster Fire Missions: Target 1 - A4 (FPL) Target 2 - C8 Target 3 - C5 Target 4 - C6	100 (6 to 9 rd burst) approx. 25 rds per target. 4:1 or ball.	Full	N/A	Obtain direction and elevation readings.	
7. Predetermined Firing (range card) Fire Missions: Target 2 Target 1 Target 4 Target 3	100 (6 to 9 rd burst) 25 round belt for each fire mission. 4:1 or ball.	Half	N/A	4	4

Figure 1.6. Continued.

Order Number and Target Description	Ammunition and Fire Control	Type Load	Time	No. of Targets Engaged	Required No. of Target Hits (Qualify)
8. Night Sight. Zeroing 25M	24 (6 single rds and three 6 rd bursts) 4:1 or ball.	Full	N/A	1	N/A
	624 Total Rounds (Evaluation--Tripod Firing)				
Phase III: Evaluation--Vehicle Firing (Optional)					
1. Stationary Vehicle. Area Target, 300M.	100 (6 to 9 rd burst) Blank.	Half	N/A	1	5
2. Moving Vehicle. Area Target, 300M	100 (6 to 9 rd burst) Blank.	Full	N/A	1	2
	200 Total Rounds (Evaluation--Vehicle Firing--Optional)				
	1124 Total Rounds For Course				

1.15 Course Information: 12-Month Recurring Crew-Served--10 Meter:

1.15.1. **Targets for the Course:** Use the 10-meter machine gun target for Phases I and II (NSN 6920-00-078-5123). Double "E" silhouette targets, empty 55-gallon drums, salvaged vehicles, or mounds of earth can be used to represent personnel and vehicle targets for Phase III.

1.15.2. **Standards:**

- On Phases I and II, Orders 3 and 4, all targets must have at least one hit each. Initial lay on the linear target with depth is midpoint. The gunner then traverses and searches to the near flank (left), back to the far flank (right), and then back to the midpoint. Initial lay on the deep target is also midpoint. The gunner then searches down to the near end, up to the far end, and then back to the midpoint.
- On Phase II, Order 5, all targets must have at least one hit each. Two guns should fire at the same target (linear with depth and deep) with each gun initially laying on the midpoint. Each gun will then traverse and/or traverse and search (Left gun: all targets left. Right gun: all targets right) ensuring complete target coverage.
- On Phase II, Order 7, gunner must hit at least four targets.
- On Phase II, Order 8, night sight will be zeroed during daytime, at 25 meters (US Army FM 23-67, *Machine Gun, 7.62mm, M60,* Appendix G).
- On Phase III, gunner must have at least five hits on target area from stationary position and two hits on target area while moving.

1.15.3. **Course Notes:**

- Instructors are to teach trainees, as needed, during the practice phase. During evaluation phases, instructors will help trainees between orders of fire, as needed, correct safety infractions, and supervise how trainees apply immediate action procedures.
- An assistant gunner will be used for all orders of fire. Emphasize the importance of teamwork. Except for zeroing, assistant gunners will give all fire corrections to the gunners. Ensure trainees are equipped with the appropriate tripod, T&E mechanism, and spare barrel kit. Gun crews will wear a helmet with liner, flak vest, and hearing protection during all firing orders. Both the gunner and assistant gunner must have the protective mask and gloves on their person during the entire course.
- Sight corrections and/or T&E adjustments may be made at any time throughout the course.
- In Phases I and II, Order 3, the gunner will use a 76-round belt for the deep target and a 100-round belt for the linear with depth target.
- In Phase I, Orders 1 and 2, and Phase II, Orders 3 and 4, gunners will engage targets as a single gun covering the entire target.
- After engaging both point targets in orders

requiring CWDE, the gun crew will immediately put the gun on safe and don the protective mask and gloves. They will then engage the deep target and perform barrel change while wearing mask and gloves. Assistant gunners must still use protective mitten during barrel changes.

- After Phase II, Order 4, the target will be replaced.
- Phase II, Order 5, evaluates day defensive techniques of employing machine guns in pairs and special division of targets. If range facilities do not permit firing two guns at the same target, designate odd numbered guns to assume "left gun" responsibilities and even numbered guns to assume "right gun" responsibilities.
- Phase II, Orders 6 and 7, evaluate gun crew's ability to prepare range cards and engage targets using range cards. On Order 6, they will use a 100-round belt to obtain direction and elevation readings for the targets indicated. They will have 10 minutes to prepare field
- expedient range cards using bandoleer boxes, wooden spacers from ammo crates, etc., and to complete this order. After completing Order 6, staple a new target directly over the top of the target used to obtain T&E readings. The new target will evaluate accuracy of the gun crew's range cards, and simulate night fire. On Order 7, conduct four fire missions as indicated. Gunner will fold rear sight down and fire a 25-round belt for each mission. Do not conduct fire missions in numerical order.
- Phase III is optional to fill mission training needs. Implementation of these phases is at the discretion of MAJCOMs and local commanders.
- Conduct Phase III using blank ammunition and MILES equipped weapons and targets. Use one area target at 300 meters with at least four double "E" silhouettes or 55-gallon drums. Position the vehicle parallel to the firing line with the weapon pointing down range (perpendicular to the vehicle). Hang MILES harnesses over the targets or drums. An instructor must be down range in the target area with a MILES reset key and radio. The instructor indicates target hits and resets MILES harnesses for each gunner. When conducting moving vehicle firing, the vehicle should move parallel to the firing line from 3 to 5 mi/h.
- Should gunners fail to achieve a qualified score on any order, they are unqualified. However, gunners need only to refire and qualify on those orders failed.
- AF Form 522 need only reflect qualified "Q" or unqualified "UQ" for each firing phase. A numerical score is not required in the score block of AF Forms 522 or 710.

Figure 1.7. Prone Position (Bipod).

Prone Position (Bipod). The shooter (right handed) assumes a prone position behind the M60 keeping the body in line with the barrel. The hinged shoulder rest is placed on the right shoulder. Legs are spread a comfortable distance apart with heels down and toes pointed outward. Place left hand on top of the cover and grasp the pistol grip with the right hand. Maintain a firm, steady pressure down and to the rear with both hands (pull the gun down and tightly into the shoulder). Rest cheek lightly against the stock and left hand with shoulders level and elbows an equal distance apart below the receiver of the gun. Recommend sandbagging the bipod legs. ***NOTE:*** Left-handed firing is discouraged because of the cartridge ejection pattern and location of cover latch.

Figure 1.8. Prone Position (Tripod).

Prone Position (Tripod). The gunner assumes a prone position behind the M60 as in the bipod prone position except that the hinged shoulder rest is not used. Grasp the pistol grip with the right hand. With the left hand palm down, grasp the elevating handwheel. Maintain a firm downward pressure with both hands. Rest the cheek (optional) against the cover. Keep elbows inside the tripod legs, but not touching the tripod. Place right shoulder lightly against the stock but do not apply pressure as this could move the gun out of alignment. Recommend sandbagging the tripod legs. ***NOTE:*** Left-handed firing is discouraged because of the cartridge ejection pattern (location of cover latch) and T&E adjustments are made with the left hand.

Figure 1.9. HMMWV Mounted Position.

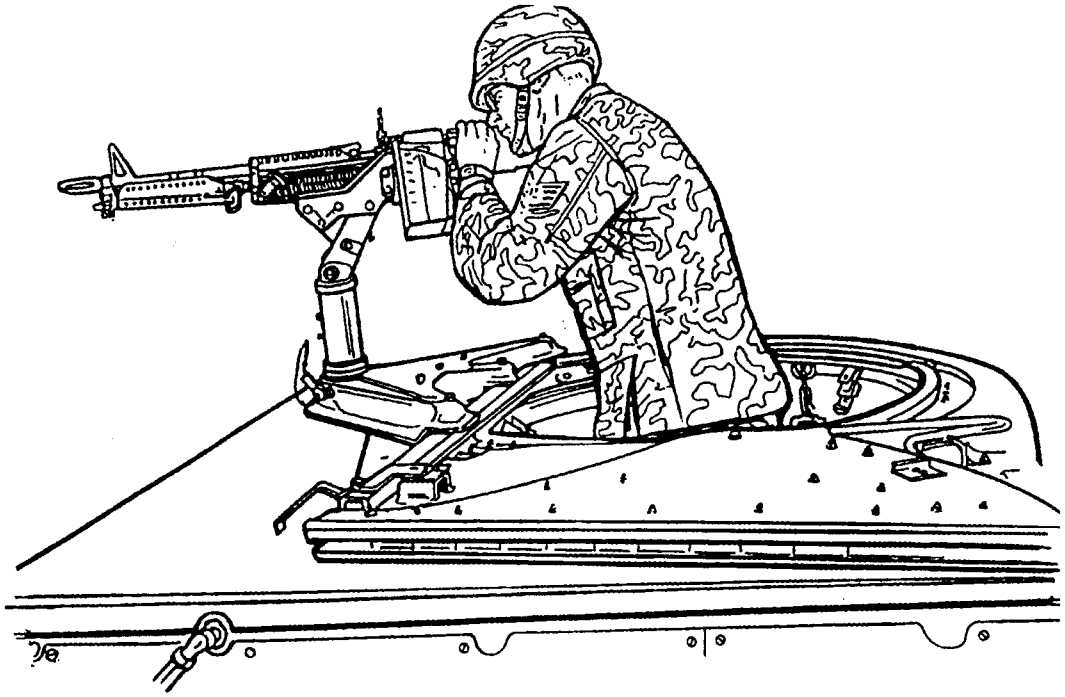


Figure 1.10. Peacekeeper Mounted Position.

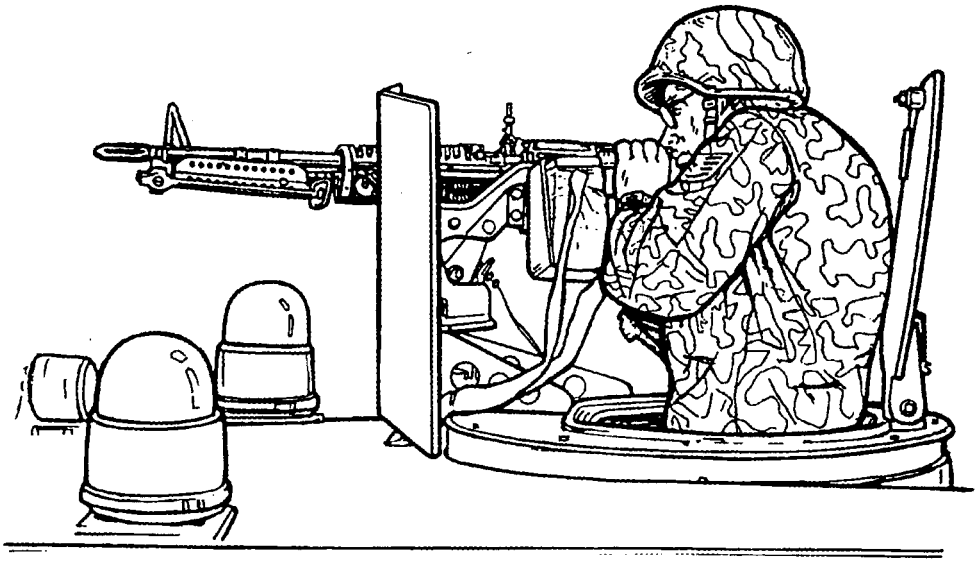


Figure 1.11. Performance Evaluation for Crew-Served M60 Machine Gunners.

1.16. Performance Evaluation Information Crew-Served:

- Before Test. Combat Arms Training and Maintenance (CATM) instructors must ensure the test station and equipment configuration is prepared the same for all people evaluated. Ensure the weapon and equipment are returned to operational condition following previous evaluations. Instructors must make every effort to ensure instructions are the same for all people evaluated.
- During Test. Instructors are not to assist trainees. Instructors are to intervene only to prevent personnel injury or damage to equipment, or when the trainee is unable to complete a step in the task sequence. If necessary, instructors will perform steps or procedures necessary to continue the evaluation. Instructors will evaluate task performance and document results on the forms provided.
- After Test. After each performance task, instructors will provide remedial training for all items performed incorrectly. Instructors will demonstrate the correct procedures and explain what the trainee did wrong. Instructors must then prepare the test station for the next evaluation. Return weapon to operational condition if required and reconfigure weapon and equipment to the start position.
- Scoring. CATM instructors will evaluate all tasks and individual steps for completing the tasks and annotate the score sheet as "GO" or "NO GO." Performing individual steps out of sequence, adding steps, and/or accomplishing unnecessary actions, does not necessarily constitute task failure. Instructors must evaluate students performance to determine if actions taken were safe procedures, resulted in correct functioning and operation, and they accomplished the purpose of the task. Tasks not completed within the established time limits are scored as "NO GO."

1.16.1. **Performance Evaluation 1:**

- Task: Clear the M60.
- Condition: Given an M60 (bipod mode), cover closed, bolt forward, safety lever on **safe**.
- Standard: Without assistance, clear the M60 within 30 seconds.

STEP	TASK	GO	NO-GO
1.	Place safety lever on **fire**	_____	_____
2.	Lock the bolt to the rear.	_____	_____
3.	Place safety lever on **safe**.	_____	_____
4.	Return cocking handle forward.	_____	_____
5.	Open cover and inspect cover, feed		

	tray, receiver, and chamber.	_____	_____
6.	Place safety lever on **fire**, close the cover, and ride the bolt forward.	_____	_____
7.	Place safety lever on **safe**.	_____	_____

1.16.2. **Performance Evaluation 2:**
- Task: Half-load the M60.
- Condition: Given an M60 (bipod mode), cover closed, bolt forward, belt of dummy ammunition, safety lever on **safe**.
- Standard: Without assistance, half-load the M60 within 1 minute.

STEP	TASK	GO	NO-GO
1.	Clear the M60.	_____	_____
2.	Insert the belt of dummy ammunition into the feed tray opening until a click is heard or felt. Gently pull on the belt to ensure engagement with the belt holding pawl.	_____	_____
3.	Place safety lever on **fire**.	_____	_____

1.16.3. **Performance Evaluation 3:**
- Task: Fire from the half-load.
- Condition: Given an M60, simulate firing the half-load position.
- Standard: Without assistance, fire the M60 from the half-load position within 30 seconds.

STEP	TASK	GO	NO-GO
1.	Pull cocking handle to the rear, locking the bolt back, and return cocking handle forward.	_____	_____
2.	Fire by pressing the trigger.	_____	_____

1.16.4. **Performance Evaluation 4:**
- Task: Clear the M60 from the half-load position.
- Condition: Given an M60 (bipod mode), bolt forward, cover closed, safety lever on **safe**, dummy ammunition inserted into feed tray.
- Standard: Without assistance, clear the M60 from the half-load position within 30 seconds.

STEP	TASK	GO	NO-GO
1.	Ensure the safety lever is on **safe**.	_____	_____
2.	Raise the cover and remove the ammunition from the feed tray.	_____	_____
3.	Move the safety lever to **fire**.	_____	_____
4.	Pull the cocking handle to the rear, while holding cocking handle to the rear, move the safety lever to **safe**.	_____	_____
5.	Visually inspect the cover, feed tray, chamber, and receiver.	_____	_____
6.	Close the cover, move the safety lever to **fire**, press the trigger while riding the bolt forward, and return safety lever to **safe**.	_____	_____

1.16.5. **Performance Evaluation 5:**
- Task: Full-load the M60.
- Condition: Given an M60 (bipod mode), cover closed, bolt forward, weapon on **safe**, belt of dummy ammunition.
- Standard: Without assistance, full-load the M60 within 30 seconds.

STEP	TASK	GO	NO-GO
1.	Place safety lever on **fire** and lock the bolt to rear.	_____	_____
2.	Return cocking lever forward, place safety lever on **safe**, and open cover.	_____	_____

3.	Place the dummy ammunition belt into the feed tray with the first round in the feed tray groove aligned with the chamber.	_____	_____
4.	Close and secure the cover.	_____	_____

1.16.6. **Performance Evaluation 6:**

- Task: Clear the M60 from the full-load position.
- Condition: Given an M60 (bipod mode), bolt locked to the rear, dummy ammunition round in the feed tray groove, cover closed, safety lever on **safe**.
- Standard: Without assistance, clear the M60 from the full-load position within 30 seconds.

STEP	TASK	GO	NO-GO
1.	Ensure safety lever is on **safe**.	_____	_____
2.	Open the cover and remove the ammunition from the feed tray.	_____	_____
3.	Inspect the cover, feed tray, receiver, and chamber.	_____	_____
4.	Close the cover, move the safety lever to **fire**, press the trigger and ride the bolt forward.	_____	_____
5.	Move the safety lever to **safe**.	_____	_____

1.16.7. **Performance Evaluation 7:**

- Task: Conduct a barrel change on the M60.
- Condition: Given an M60 (bipod mode), cover closed, bolt forward, weapon on **safe**, spare barrel kit.
- Standard: Without assistance, conduct a barrel change on the M60 within 1 minute. **NOTE:** Use of safety mitten is required when conducting a barrel change on the M60.

STEP	TASK	GO	NO-GO
1.	Place safety lever on **fire**, lock the bolt to the rear, and place safety lever on **safe**.	_____	_____
2.	Raise the barrel lock lever and remove barrel.	_____	_____
3.	Attach new barrel and flip barrel lock lever down, locking barrel into position.	_____	_____
4.	Pull slightly on barrel to ensure barrel is properly locked.	_____	_____

1.16.8. **Performance Evaluation 8:**

- Task: Disassemble (field strip) the M60 into eight major groups.
- Condition: Given an M60, bolt locked to the rear, cover closed, weapon on **safe**, spare barrel kit.
- Standard: Without assistance, disassemble the M60 into the eight major groups within 4 minutes.

STEP	TASK	GO	NO-GO
1.	Clear the weapon and ride the bolt forward.	_____	_____
2.	Remove the stock group.	_____	_____
3.	Remove the yoke, buffer, drive spring and guide, and operating rod group.	_____	_____
4.	Separate the bolt assembly from the operating rod.	_____	_____
5.	Remove the trigger mechanism grip group.	_____	_____
6.	Remove the barrel group.	_____	_____
7.	Remove the cover, feed tray,		

	and hanger group.	_____	_____
8.	Remove the forearm assembly group.	_____	_____

1.16.9. **Performance Evaluation 9:**

- Task: Assemble M60.
- Condition: Given a disassembled (field stripped) M60 and a spare barrel kit.
- Standard: Without assistance, assemble the M60 within 4 minutes.

STEP	TASK	GO	NO-GO
1.	Attach the forearm assembly group.	_____	_____
2.	Attach the cover, feed tray, and hanger group.	_____	_____
3.	Attach the barrel group.	_____	_____
4.	Attach the trigger mechanism grip group.	_____	_____
5.	Attach bolt assembly to the operating rod.	_____	_____
6.	Install operating rod group, buffer, and yoke.	_____	_____
7.	Attach stock group.	_____	_____

1.16.10. **Performance Evaluation 10:**

- Task: Function check the M60.
- Condition: Given an M60 (bipod mode), cover open, bolt forward, safety lever on **safe**.
- Standard: Without assistance, perform a function check on an M60 within 30 seconds.

STEP	TASK	GO	NO-GO
1.	Place the safety lever on **fire** and lock the bolt to the rear.	_____	_____
2.	Close the cover, place the safety lever on **safe**, and press the trigger.	_____	_____
3.	Place the safety lever on **fire** and press the trigger while riding the bolt forward.	_____	_____

1.16.11. **Performance Evaluation 11:**

- Task: Perform immediate action procedures on the M60.
- Condition: Given an M60 (bipod mode), cover closed, dummy round in chamber, bolt forward, belt of dummy ammunition in the feed tray, safety lever on **fire**.
- Standard: Without assistance, perform immediate action on the M60 within 15 seconds.

STEP	TASK	GO	NO-GO
1.	Pull the cocking handle back, locking the bolt to the rear.	_____	_____
2.	Observe ejection port to see if cartridge case, belt link, or round is ejected.	_____	_____
3.	If cartridge case, belt link, or round is ejected, return cocking handle forward and continue firing.	_____	_____

1.16.12. **Performance Evaluation 12:**

- Task: Mount an M60 on an M122 tripod, zero the T&E mechanism, and attach T&E mechanism.
- Condition: Given an M60, cover closed, bolt forward, safety lever on **safe**, a pintle, an M122 tripod with legs folded, unzeroed T&E mechanism.
- Standard: Without assistance, mount the M60 to the M122 tripod, zero the T&E, and attach the T&E mechanism within 4 minutes.

STEP	TASK	GO	NO-GO
1.	Set up the tripod.	_____	_____
2.	Attach the pintle to the tripod and mount the M60.	_____	_____
3.	Zero the T&E mechanism and attach to the M60.	_____	_____
4.	Attach the T&E mechanism to the traversing slide bar and secure in position.	_____	_____

1.16.13. **Performance Evaluation 13:**

- Task: Read the T&E data from a prepared range card and set the data on the T&E and traversing bar.
- Condition: Given an M60 with the T&E, properly zeroed and attached, prepared range card.
- Standard: Without assistance, read the data from the prepared range card and set the data on the T&E mechanism and traversing bar within 1 minute.

STEP	TASK	GO	NO-GO
1.	Obtain target direction from the range card and position traversing slide to the correct position on the traversing bar.	_____	_____
2.	Obtain elevation readings (both major and minor) from the range card and set data on the elevation handwheel.	_____	_____

Figure 1.12. Performance Evaluation for Individual M60 Machine Gunners.

1.17. Performance Evaluation Information Individual:

- Before Test. CATM instructors must ensure the test station and equipment configuration is prepared the same for all people evaluated. Ensure the weapon and equipment are returned to operational condition following previous evaluations. Instructors must make every effort to ensure instructions are the same for all people evaluated.
- During Test. Instructors are not to assist trainees. Instructors are to intervene only to prevent personnel injury or damage to equipment or when the trainee is unable to complete a step in the task sequence. If necessary, instructors will perform steps or procedures necessary to continue the evaluation. Instructors will evaluate task performance and document results on the forms provided.
- After Test. After each performance task, instructors will provide remedial training for all items performed incorrectly. Instructors will demonstrate the correct procedures and explain what the trainee did wrong. Instructors must then prepare the test station for the next evaluation. Return weapon to operational condition, if required, and reconfigure weapon and equipment to the start position.

Scoring. CATM instructors will evaluate all tasks and individual steps for completing the tasks and mark the score sheet as "GO" or "NO GO." Performing individual steps out of sequence, adding steps, and/or accomplishing unnecessary actions, does not necessarily constitute task failure. Instructors must evaluate students performance to determine if actions taken were safe procedures, resulted in correct functioning and operation, and accomplish the purpose of the task. Tasks not completed within the established time limits are scored as "NO GO."

1.17.1. **Performance Evaluation 1:**
- Task: Clear the M60.
- Condition: Given an M60 (bipod mode), cover closed, bolt forward, safety lever on **safe**.
- Standard: Without assistance, clear the M60 within 30 seconds.

STEP	TASK	GO	NO-GO
1.	Place safety lever on **fire**.	_____	_____
2.	Lock the bolt to the rear.	_____	_____
3.	Place safety lever on **safe**.	_____	_____
4.	Return cocking handle forward.	_____	_____
5.	Open cover and inspect cover, feed tray, receiver, and chamber.	_____	_____
6.	Place safety lever on fire, close the cover, and ride the bolt forward.	_____	_____
7.	Place safety lever on **safe**.	_____	_____

1.17.2. **Performance Evaluation 2:**
- Task: Half-load the M60.
- Condition: Given an M60 (bipod mode), cover closed, bolt forward, belt of dummy ammunition, safety lever on **safe**.
- Standard: Without assistance, half-load the M60 within 1 minute.

STEP	TASK	GO	NO-GO
1.	Clear the M60.	_____	_____
2.	Insert the belt of dummy ammunition into the feed tray opening until a click is heard or felt. Gently pull on the belt to ensure engagement with the belt holding pawl.	_____	_____
3.	Place safety lever on **fire**.	_____	_____

1.17.3. **Performance Evaluation 3:**
- Task: Fire from the half-load.
- Condition: Given an M60, simulate firing the half-load position.
- Standard: Without assistance, fire the M60 from the half-load position within 30 seconds.

STEP	TASK	GO	NO-GO
1.	Pull cocking handle to the rear, locking the bolt back, and return cocking handle forward.	_____	_____
2.	Fire by pressing the trigger.	_____	_____

1.17.4. **Performance Evaluation 4:**
- Task: Clear the M60 from the half-load position.
- Condition: Given an M60 (bipod mode), bolt forward, cover closed, safety lever on **safe**, dummy ammunition inserted into feed tray.
- Standard: Without assistance, clear the M60 from the half -load position within 30 seconds.

STEP	TASK	GO	NO-GO
1.	Ensure the safety lever is on **safe**.	_____	_____
2.	Raise the cover and remove the ammunition from the feed tray.	_____	_____
3.	Move the safety lever to **fire**.	_____	_____
4.	Pull the cocking handle to the rear, while holding cocking handle to the rear, move the safety lever to **safe**.	_____	_____
5.	Visually inspect the cover, feed tray, chamber, and receiver.	_____	_____
6.	Close the cover, move the safety lever to **fire**, press the trigger while riding the bolt forward, and return safety lever to **safe**.	_____	_____

1.17.5. **Performance Evaluation 5:**

- Task: Full-load the M60.
- Condition: Given an M60 (bipod mode), cover closed, bolt forward, weapon on **safe**, belt of dummy ammunition.
- Standard: Without assistance, full-load the M60 within 30 seconds.

STEP	TASK	GO	NO-GO
1.	Place safety lever on **fire** and lock bolt to rear.	_____	_____
2.	Return cocking lever forward, place safety lever on **safe**, and open cover.	_____	_____
3.	Place the dummy ammunition belt into the feed tray with the first round in the feed tray groove aligned with the chamber.	_____	_____
4.	Close and secure the cover.	_____	_____

1.17.6. **Performance Evaluation 6:**

- Task: Clear the M60 from the full-load position.
- Condition: Given an M60 (bipod mode), bolt locked to the rear, dummy ammunition round in the feed tray groove, cover closed, safety lever on **safe**.
- Standard: Without assistance, clear the M60 from the full-load position within 30 seconds.

STEP	TASK	GO	NO-GO
1.	Ensure safety lever is on **safe**.	_____	_____
2.	Open the cover and remove the ammunition from the cover.	_____	_____
3.	Inspect the cover, feed tray, receiver, and chamber.	_____	_____
4.	Close the cover, move the safety lever to **fire**, press the trigger and ride the bolt forward.	_____	_____
5.	Move the safety lever to **safe**.	_____	_____

1.17.7. **Performance Evaluation 7:**

- Task: Disassemble (field strip) the M60 into eight major groups.
- Condition: Given an M60, bolt locked to the rear, cover closed, weapon on **safe**, spare barrel kit.
- Standard: Without assistance, disassemble the M60 into the eight major groups within 4 minutes.

STEP	TASK	GO	NO-GO
1.	Clear the weapon and ride the bolt forward.	_____	_____
2.	Remove the stock group.	_____	_____
3.	Remove the yoke, buffer, drive spring and guide, and operating rod group.	_____	_____
4.	Separate the bolt assembly from the operating rod.	_____	_____
5.	Remove the trigger mechanism grip group.	_____	_____
6.	Remove the barrel group.	_____	_____
7.	Remove the cover, feed tray, and hanger group.	_____	_____
8.	Remove the forearm assembly group.	_____	_____

1.17.8. **Performance Evaluation 8:**

- Task: Assemble M60.
- Condition: Given a disassembled (field stripped) M60 and a spare barrel kit.
- Standard: Without assistance, assemble the M60 within 4 minutes.

STEP	TASK	GO	NO-GO
1.	Attach the forearm assembly group.	_____	_____
2.	Attach the cover, feed tray, and hangar group.	_____	_____
3.	Attach the barrel group.	_____	_____
4.	Attach the trigger mechanism grip group.	_____	_____
5.	Attach bolt assembly to the operating rod.	_____	_____
6.	Install operating rod group, buffer, and yoke.	_____	_____
7.	Attach stock group.	_____	_____

1.17.9. **Performance Evaluation 9:**

- Task: Function check the M60.
- Condition: Given an M60 (bipod mode), cover open, bolt forward, safety lever on **safe**.
- Standard: Without assistance, perform a function check on an M60 within 30 seconds.

STEP	TASK	GO	NO-GO
1.	Place the safety lever on **fire** and lock the bolt to the rear.	_____	_____
2.	Close the cover, place the safety lever on **safe**, and press the trigger.	_____	_____
3.	Place the safety lever on **fire** and press the trigger while riding the bolt forward.	_____	_____

1.17.10. **Performance Evaluation 10:**

- Task: Perform immediate action procedures on the M60.
- Condition: Given an M60 (bipod mode), cover closed, dummy round in chamber, bolt forward, belt of dummy ammunition in the feed tray, and safety lever on fire.
- Standard: Without assistance, perform immediate action on the M60 within 15 seconds.

STEP	TASK	GO	NO-GO
1.	Pull the cocking handle back, locking the bolt to the rear.	_____	_____
2.	Observe ejection port to see if cartridge case, belt link, or round is ejected.	_____	_____
3.	If cartridge case, belt link, or round is ejected, return cocking handle forward and continue firing.	_____	_____

Chapter 2

MK 19 40MM MACHINE GUN TRAINING PROGRAM

2.1. MK 19 40MM Machine Gun Air Force Qualification Course (AFQC). This course provides the minimum training and evaluation required to qualify Air Force members with the MK 19.

2.2. Training Overview:

2.2.1. **Initial Training.** This is the trainee's first participation in the MK 19 Qualification Training Program. Initial training consists of classroom instruction, qualification on the required evaluation phases of the AFQC, and passing the performance evaluations

2.2.2. **Recurring Training--12 Month.** This is qualification training after initial qualification. It consists of classroom instruction, qualification on the required evaluation phases of the AFQC, and passing the performance evaluations. Evaluation is mandatory on an annual basis.

2.2.3. **Recurring Training--6 Month.** This is weapon operator skill recertification training. This training consists of classroom instruction and passing the performance evaluations. Evaluation is mandatory 6 months after initial and 12-month recurring training.

2.2.4. **Remedial Training.** This is the minimum training needed to correct deficiencies causing an individual to fail an evaluation.

2.2.5. **Performance Evaluations.** Performance evaluations consist of weapon operator skills certification. Evaluation is mandatory during initial, 12-month recurring, and 6-month recurring training.

2.2.6. **Unit Training.** Refresher training on operator skills and knowledge provided by units to help maintain the gunner’s proficiency. Units should conduct this training before exercises and deployments.

2.3. Instructor Guidelines and Ratios:

2.3.1. **Classroom.** Instructors will help trainees during portions of training requiring physical handling of the weapons. Ratio: one instructor per weapon. This ratio does not include the lead instructor. They will supervise and evaluate trainees during performance evaluations. Ratio: one instructor per weapon. They will supervise, evaluate, and assist trainees during operator maintenance evaluation (care and cleaning). Ratio: one instructor per 10 trainees.

2.3.2. **Range.** Instructors will supervise, assist, coach, and teach during prefire setup and practice, and evaluate orders of fire, as needed. Ratio: one instructor per weapon and one instructor as tower operator and/or line supervisor.

2.4. MK 19 Qualification Plan of Instruction. The plan in the following paragraphs is intended to provide instruction standardization. This program is mandatory for initial and recurring training. Remedial training is in-depth, concentrating on known problems. Trainees must meet and be evaluated to the performance standards of these training objectives. Approximate training times for this program are:

- Initial training--30 hours.
- Recurring training (12 months)--22 hours.
- Recurring training (6 months)--8 hours.
- Remedial training--as needed.

2.5. Training Goal. The training goal is to instill confidence in the trainee to develop and maintain the capability to use the MK 19 against enemy targets and maintain the weapon to the level authorized for the operator. With the exception of operator maintenance, trainees must perform all evaluated tasks without assistance.

2.6. Training Objectives. The training objectives required for successful completion of this program are listed in table 2.1.

2.6.1. **Information Training Objectives. Trainees must be familiar with:**

- Roles of the MK 19.
- Safety rules and procedures.
- Characteristics, nomenclature, and general data.
- Range determination techniques.
- Lateral distance measurement techniques.
- Techniques of fire.
- Classes of fire and types of targets.
- Zeroing rear sight.
- Sight adjustments.
- Adjusted aiming point method of fire.

2.7. Recommended Sequence of Events:

2.7.1. **First Period--Orientation and Mechanical Training.** About 14 hours are needed for initial, 8 hours for 12-month recurring and 4 hours for 6-month recurring training..

- Prepare all required forms and documents.
- Discuss MK 19 weapons safety.
- MK 19 roles.

- MK 19 general description and characteristics.
- MK 19 general nomenclature.
- Types of ammunition and how to care, handle, and preserve ammunition for the MK 19.

Explain, demonstrate, and conduct practical exercises on:

- Clearing the MK 19.
- Disassembling the MK 19.
- Assembling the MK 19.
- Functionally checking the MK 19.
- Mounting the MK 19 on the M3 tripod and vehicle mount with T&E mechanism.
- MK 19 loading, unloading (half-and full-load configurations), reloading, and clearing.
- Caring for, cleaning, lubricating, and operator inspection procedures for the MK 19.
- Stoppages, malfunctions, and immediate action procedures.
- Destruction procedures for the MK 19.

2.7.2. **Second Period--Preparatory Marksmanship and Crew Training.** About 8 hours are needed for initial, 6 hours for 12-month recurring, and 2 hours for 6-month recurring training.

Discuss:

- Target acquisition.
- Target identification.
- Range determination.
- Fire commands.
- Explain/demonstrate firing positions.
- Explain how a steady position, grip, sight alignment, sight picture, trigger manipulation, and zeroing or round sensing ensure effective burst-on-target.
- Characteristics of fire and classes of fire with respect to the gun and target.
- Using the T&E mechanism.
- Range card preparation and use.
- Crew drill training.
- Assuming proper firing positions.

2.7.3. **Third Period--Performance Evaluations.** About 2 hours are needed for initial, 12-month recurring and 6-month recurring training.

- Prepare performance evaluation forms.
- Brief students on evaluation criteria.
- Set up weapons and equipment.

Conduct performance evaluation on:

- Mounting MK 19 on M3 tripod or vehicle mount.
- Attaching T&E mechanism.
- Clearing.
- Disassembly.
- Inspection of MK 19.
- Assembly.
- Function Check.
- Half Loading.
- Full Loading.
- Clearing from the full-load.
- Reading a range card and setting the data on a T&E.

2.7.4. **Fourth Period--400 Meter Zero Teaching Practice Fire Training.** About 2 hours are needed for initial and 12-month recurring training.

- Teach safety requirements for live-fire training.
- Explain range procedures.
- Review marksmanship fundamentals.
- Review procedures for clearing stoppages during live-fire training.
- Conduct practice fire. Objective is to prepare each trainee to confidently and effectively fire MK 19 before evaluation phases.

2.7.5. **Fifth Period--Live Fire and Operator Maintenance Evaluation**. About 4 hours are needed for initial and 12-month recurring training.

- Brief trainees on evaluation criteria.
- Conduct live-fire evaluation phases. Trainees must qualify without instructor assistance.
- Instructors will score evaluation phases.
- Evaluate the trainee's proficiency in operator maintenance and function check procedures.
- Trainees must correctly perform function check.
- Provide either immediate remedial training for those trainees who fail to qualify or demonstrate proficiency in operator maintenance or notify unit training section of the status of individuals who fail.
- Complete applicable blocks on AF Forms 522 and 710.

Table 2.1. Training Objectives/Intermediate Training Objectives (ITO).

	Objective	Condition	Standard
		Given:	
1.	Operate MK 19.	MK 19 with dummy ammunition.	Operate MK 19.
ITO			
1.1	Mount the MK 19 on a tripod.	MK 19 and M3 tripod.	Mount the MK 19.
1.2	Clear the MK 19.	MK 19 mounted on an M3 tripod or vehicle.	Clear the MK 19.
1.3	Half-load and unload the MK 19.	MK 19 mounted on an M3 tripod or vehicle, dummy ammunition.	Half-load and unload the MK 19.
1.4	Full-load and unload the MK 19.	MK 19 mounted on an M3 tripod or vehicle, dummy ammunition.	Full-load and unload the MK 19.
1.5	Perform immediate action procedures.	MK 19 mounted on an M3 tripod or vehicle.	Perform immediate action procedures.
1.6	Perform a preventative maintenance inspection.	MK 19 mounted on an M3 tripod.	Perform a preventative maintenance (refire) inspection on the MK 19.
1.7	Zero and attach the traversing and elevating (T&E) mechanism.	MK 19 mounted on an M3 tripod, T&E mechanism.	Zero and attach the T&E mechanism to the MK 19 and tripod and MK 19 and vehicle mount.
1.8	Mount MK 19 on a vehicle mount.	MK 19 and a MK 64 mount.	Mount MK 19 on MK 64.
1.9	Place MK 19 in and out of action.	MK 19, dummy ammunition, associated equipment.	Place the MK 19 in and out of action.
2.	Performance evaluation.	MK 19.	Successfully complete all phases of performance evaluation.
3.	Demonstrate effective techniques of fire.	MK 19 with required ammunition and equipment and a firing range of sufficient target distances	Fire with sufficient accuracy to hit targets within range and capabilities of MK 19 and qualify on appropriate live-fire orders.
ITO			
3.1	Zero the MK 19.	MK 19 mounted on an M3 tripod and ammunition.	Fire the practice phase and zero the machine gun.
3.2	Qualify on the MK 19.	MK 19, M3 tripod, vehicle mount, and ammunition.	Qualify on all required phases.
3.3	Prepare range cards.	MK 19 mounted on an M3 tripod, T&E mechanism, blank range card, and ammunition.	Prepare a range card and qualify on the appropriate phase of fire.
4.	Perform operator maintenance.	MK 19, associated equipment, cleaning and lubricating supplies.	Clean, inspect, and lubricate the MK 19.
ITO			
4.1	Disassemble the MK 19.	MK 19.	Disassemble the MK 19.
4.2	Clean, inspect, and lubricate the MK 19 and associated equipment.	Disassembled MK 19, required equipment, cleaning and lubricating supplies.	Clean, inspect, and lubricate the MK 19 and required equipment.
4.3	Assemble the MK 19.	MK 19.	Assemble the MK 19.
4.4	Function check the MK 19.	MK 19.	Function check the MK 19

2.8. Administrative Requirements:

2.8.1. **Reference Material:**

- AFI 36-2226, The Air Force Combat Arms Training and Maintenance (CATM) Program.
- AFMAN 36-2227, Volumes 1 and 3, Combat Arms Training and Maintenance (CATM) Training Management and Range Operations, Combat Arms Training and Maintenance M60 Machine Gun, MK 19 Machine Gun, and M2 ,.50 Caliber Machine Gun Programs.
- T.O. 11W2-5-16-1, Operator's Manual and Components List, Machine Gun 40mm, MK 19 Mod 3, T.O. 11W2-5-16-2, Organizational and Intermediate Maintenance Manual, Including Repair Parts List, Machine Gun, 40mm, MK 19 Mod 3, and T.O. 11W2-8-32-4, Mount, Machine Gun, MK 64 Cradle (Arm TM 9-1010-231-13&P).
- US Army FM 23-27, MK 19, 40mm Grenade Machine Gun Mod 3.

2.8.2. **Facilities Needed:**

- Classroom equipped with chalkboard and one table and chair per trainee.
- Impact firing range with target distances of 300 meters to 1500 meters.
- Weapon cleaning area.

2.8.3. **Training Aids and Equipment:**

- MK 19 with MK 64 cradle mount, M3 tripod, universal pintle adapter, vehicle mount, T&E mechanism, two 9/16" wrenches, ammunition container mounting bracket, ammunition container, preprinted range card, and compass.
- Belt of dummy ammunition (one per weapon).
- Flip charts.
- Overhead projector.
- Slide projector.
- Video cassette recorder and monitor.
- Slides and transparencies.
- Care and cleaning equipment as required.
- Student handout materials.
- Public address system.
- Ear and eye protection for trainees and instructors.
- Flak vest and helmet (one each per trainee firing or assisting).

2.8.4. **Documents Needed:**

- AF Forms 522, US Air Force Ground Weapons Training Data, and 710, Ground Weapons Training Record.

2.8.5. **Ammunition Needed.** Cartridge, 40mm practice, M385, as required.

- Performance evaluation forms.

Figure 2.1. Firing Requirements, MK 19 Machine Gun Air Force Qualification Course.

Order Number	Ammunition and Fire Control	Distance (Meters)	Target Description
Phase I: Practice--Tripod			
1.	24 (3 to 5 round bursts) 24 Total Rounds	400	Zero
Phase II: Evaluation--Tripod With T&E or Static Vehicle With T&E			
1.	30 (3 to 5 round bursts)	300	#1
2.	30 (3 to 5 round bursts)	800	#2
3.	30 (3 to 5 round bursts)	1000	#3
4.	30 (3 to 5 round bursts) 120 Total Rounds	1500	#4
Phase III: Evaluation--Static Vehicle or Tripod, Free Gun			
1.	12 (3 to 5 round bursts)	300	#1
2.	12 (3 to 5 round bursts)	800	#2

Figure 2.1. Continued.

Order Number	Ammunition and Fire Control	Distance (Meters)	Target Description
3.	12 (3 to 5 round bursts)	1000	#3
4.	12 (3 to 5 round bursts) 48 Total Rounds	1500	#4
Phase IV: Evaluation--Moving Vehicle, Free Gun			
1.	12 (3 to 5 round bursts)	300 to 800	See course notes
2.	12 (3 to 5 round bursts)	300 to 800	
3.	12 (3 to 5 round bursts)	300 to 800	
4.	12 (3 to 5 round bursts) 48 Total Rounds 240 Total Rounds for Course	300 to 800	

2.9. Course Information:

2.9.1. **Targets for the Course:**

- Zero Target. Use a 3 meters X 3 meters reinforced panel or target of comparable size, preferably of metal construction. Example: refuse dumpster, 55-gallon drums, armor plating, etc.
- Target #1, Single Vehicle. Use a medium-size vehicle, approximately 8 meters X 3 meters. Other material such as 55-gallon drums, large vehicle tires, or aircraft tires, etc., may be used to simulate a single-vehicle size target.
- Target #2, Single Vehicle With Personnel. Use one vehicle-size target, 8 meters X 3 meters, and several (7 to 10) personnel size targets. Personnel targets will be approximately 2 meters high X 1 meter wide. Place personnel targets around the vehicle on the firing line side to define a 30-meter target area.
- Target #3, Line of Troops. Use several (15 to 20) personnel size targets (2 meters X 1 meter). The size of the "Line of Troops" target area is 60 meters X 5 meters. Place targets in linear or semicircle configuration.
- Target #4, Vehicle Convoy. Use at least three large vehicle-size targets. The length of the "convoy" target area is 90 meters.
- Moving Vehicle Phase Targets. This is a shoot on the move phase. A moving vehicle range may be superimposed on an existing range. If a separate area is used, construct targets according to the description of target 2 through target 5. Four targets are required with distances varying from 300 meters to 800 meters. Plainly mark the driving course where firing is permitted. For example, place traffic cones along the portion of the course where firing is permitted. The gunner will only fire upon the command of the instructor. The driver, assistant gunner (instructor), and the gunner are encouraged to work as a mobile fire team to identify targets, determine range, and identify kills or misses. If the driving course is an improved and maintained driving surface, vehicle speed will not exceed 10 miles per hour. If driving surface is unimproved and rough, vehicle speed will not exceed 5 miles per hour. ***NOTE:*** Present range design and target configuration may vary from those described for this phase. Do not reconstruct or make major modifications solely for the purpose of this phase of fire if present range configuration meets the intent of this phase.

2.9.2. **Standards:**

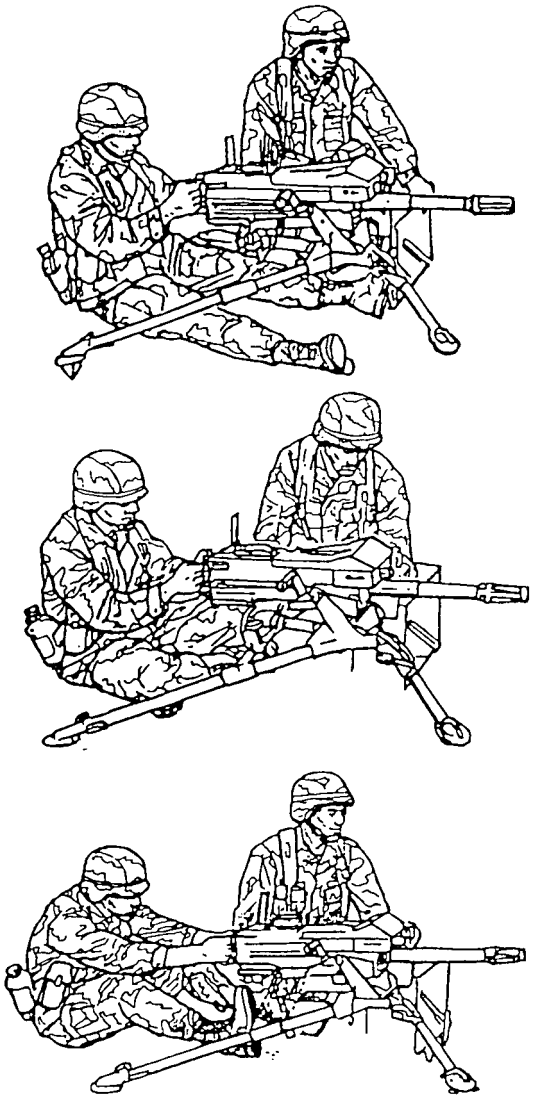
- Evaluation Phase II. All four targets must be effectively engaged within 8 minutes. This time includes reloading. All four targets must have at least two hits each.
- Target #1. A minimum of two hits within the 5-meter kill radius.
- Target #2. A minimum of two hits within the 5-meter kill radius.
- Target #3. A minimum of two hits within the 15-meter casualty radius.
- Target #4. A minimum of two hits within the 15-meter casualty radius.

- Evaluation Phase III. A minimum of one hit per target within the 15-meter casualty radius within 5 minutes.
- All four targets must have at least one hit each.
- Evaluation Phase IV. A minimum of one hit per target within the 15-meter casualty radius. All four targets must have at least one hit each.

2.9.3. **Course Notes:**

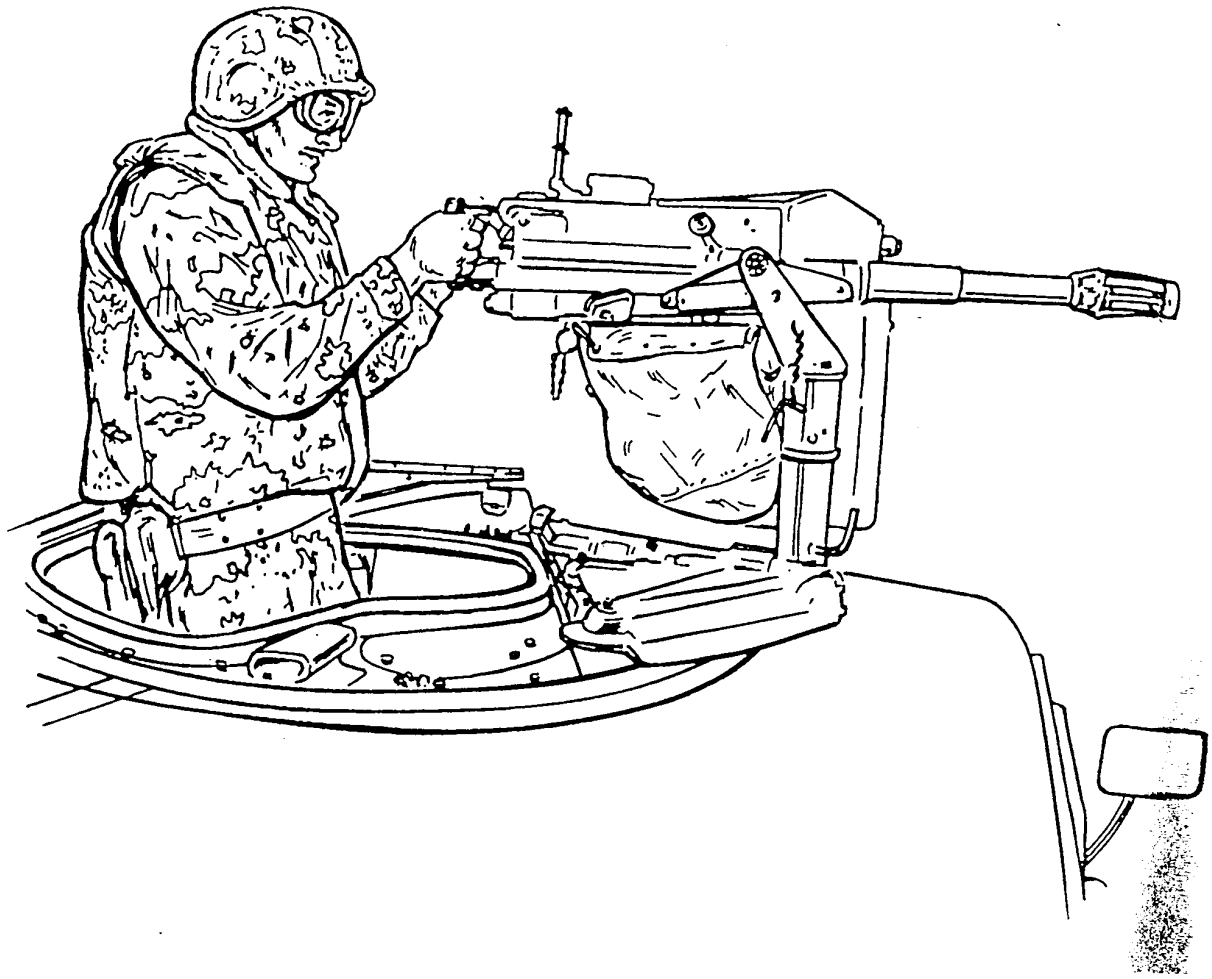
- Phase I through IV of the AFQC will be completed for initial training conducted at Air Education and Training Command (AETC) formal courses.
- Evaluation Phase III and Phase IV are optional phases for other than AETC formal courses and all 12-month recurring training to fill mission training needs. Implementation of these phases are at the discretion of the MAJCOM and local security police commanders.
- If evaluation Phase III or Phase IV are used, they become an integral part of qualification training and gunners must meet the standards of these phases to be qualified.
- Gunners must qualify on all phases fired. If the gunners fail to meet the minimum standards for any phase, they are unqualified with the weapon. Instructors may immediately refire an individual on phases a gunner failed; however, if the gunner fails to qualify after remedial training, the gunner is unqualified and must be retrained to meet all standards of 12-month recurring training.
- Instructors will not teach or coach during actual firing of the evaluation phases; however, the guncrew should be encouraged to work as a team for maximum effectiveness during firing and instructors will provide assistance between orders of fire as needed. Instructors will correct safety infractions and supervise the application of immediate action procedures by the guncrew if they experience stoppages.
- All orders of fire will be fired using training practice ammunition, NSN 1310-00-180-9359.
- The suppression stop on the cradle mount will be adjusted to prevent rounds from impacting closer than 310 meters to the weapon.
- Trainees will wear flak vests and helmets while firing.
- Hearing and eye protection are mandatory for all personnel on the firing line.

Figure 2.2. Tripod Firing Position.



Tripod Firing Position. When firing from a tripod, sit directly behind the gun between the trail legs of the tripod. Extend legs under the tripod, cross them, or brace both feet on the tripod.

Figure 2.3. Vehicle Firing Position.



Vehicle Firing Position. When firing from a vehicle, stand directly behind the gun with both hands on the control grips and thumbs resting on the trigger. Keep elbows against body and body forward help to brace the gun.

Figure 2.4. MK 19 Performance Evaluation.

2.10. Performance Evaluation Information:

- Before Test. CATM instructors must ensure the test station and equipment configuration is prepared the same for all people evaluated. Ensure the weapon and equipment are returned to operational condition following previous evaluations. Instructors must make every effort to ensure instructions are the same for all people evaluated.
- During Test. Instructors are not to assist trainees. Instructors are to intervene only to prevent personnel injury or damage to equipment or when the trainee is unable to complete a step in the task sequence. If necessary, instructors will perform steps or procedures necessary to continue the evaluation. Instructors will evaluate task performance and document results on the forms provided.
- After Test. After each performance task, instructors will provide remedial training for all items performed incorrectly. Instructors will demonstrate the correct procedures and explain what the trainee did wrong. Instructors must then prepare the test station for the next evaluation. Return weapon to operational condition, if required, and reconfigure weapon and equipment to the start position.
- Scoring. CATM instructors will evaluate all tasks and individual steps for completing the tasks and mark the score sheet as "GO" or "NO GO." Performing individual steps out of sequence, adding steps, and/or accomplishing unnecessary actions, does not necessarily constitute task failure. Instructors must evaluate students' performance to determine if actions taken were safe procedures, resulting in correct functioning and operation and accomplish the purpose of the task. Tasks not completed within the established time limits are scored as "NO GO."

2.10.1. **Performance Evaluation 1A:**

- Task: Mount the MK 19 on an M3 tripod and attach T&E mechanism.
- Condition: Given a MK 19, M3 tripod, MK 64 cradle mount, T&E mechanism, feed throat, ammunition container mounting bracket, ammunition container.
- Standard: Performing as an individual, mount the MK 19 using a MK 64 cradle mount to a M3 tripod and attach a zeroed T&E mechanism, ammunition container mounting bracket, and ammunition container, within 5 minutes.

STEP	TASK	GO	NO-GO
1.	Set up M3 tripod.	_____	_____
2.	Zero T&E.	_____	_____
3.	Attach T&E to tripod.	_____	_____
4.	Attach MK 64 cradle to tripod.	_____	_____
5.	Attach T&E to MK 64 cradle.	_____	_____
6.	Mount MK 19 on MK 64 cradle.	_____	_____
7.	Attach feed throat.	_____	_____
8.	Attach ammunition container mounting bracket.	_____	_____
9.	Attach ammunition container.	_____	_____

NOTE: As a minimum, complete one evaluation for mounting procedures 1A, 1B, or 1C. The choice should complement local mission requirements for weapon employment. Additionally, crew drills should be developed for trainees. Crew drill exercises should also complement local requirements.

2.10.2. **Performance Evaluation 1B:**

- Task: Mount the MK 19 on a M4 pedestal mount and attach a T&E mechanism.
- Condition Given an MK 19, MK 64 cradle mount, M4 pedestal mount, universal pintle adapter, two 9/16" wrenches, feed throat, ammunition container mounting bracket, ammunition container, T&E mechanism.
- Standard: Performing as an individual, mount the MK 19 on the M4 pedestal mount using a MK 64 cradle mount and universal pintle adapter and attach a feed throat, ammunition container mounting bracket, ammunition container and a zeroed T&E mechanism within 8 minutes.

STEP	TASK	GO	NO-GO
1.	Loosen M4 pedestal locking lever.	_____	_____
2.	Install pintle adapter and tighten locking lever.	_____	_____
3.	Place safety lever on **fire**.	_____	_____
4.	Mount MK 64 cradle mount.	_____	_____
5.	Secure cradle by installing quick release pin in pintle adapter.	_____	_____
6.	Zero T&E mechanism.	_____	_____
7.	Attach T&E to cradle to mount.	_____	_____
8.	Separate train lock clamp.	_____	_____
9.	Attach train lock clamp to M4 pedestal.	_____	_____
10.	Attach two positioning clamps, one above and one below the train lock clamp, and tighten.	_____	_____
11.	Mount MK 19 on MK 64 cradle.	_____	_____
12.	Attach feed throat.	_____	_____
13.	Attach ammunition container mounting bracket.	_____	_____
14.	Attach ammunition container.	_____	_____

2.10.3. **Performance Evaluation 1C:**

- Task: Mount the MK 19 on a High Mobility Multipurpose Wheeled Vehicle (HMMWV) universal pedestal mount and attach a T&E mechanism.
- Condition: Given a MK 19, MK 64 cradle mount, HMMWV with universal pedestal mount, universal pintle adapter, two 9/16" wrenches, feed throat, ammunition container mounting bracket, ammunition container, T&E mechanism.
- Standard: Performing as an individual, mount the MK 19 on the HMMWV universal pedestal mount using a MK 64 cradle mount and universal pintle adapter and attach a feed throat, ammunition container mounting bracket, ammunition container and zeroed T&E mechanism within 8 minutes.

STEP	TASK	GO	NO-GO
1.	Loosen lock screws on HMMWV pintle adapter.	_____	_____
2.	Install pintle adapter and tighten lock screws.	_____	_____
3.	Remove pintle adapter quick release pin.	_____	_____
4.	Install carriage and cradle assembly.	_____	_____
5.	Secure cradle by installing quick release pin through pintle adapter.	_____	_____
6.	Zero T&E and attach to pivot arm assembly.	_____	_____
7.	Attach T&E to cradle.	_____	_____
8.	Separate train lock clamp.	_____	_____
9.	Attach train lock clamp to base of HMMWV mount and secure.	_____	_____
10.	Install one positioning clamp above train lock clamp and tighten.	_____	_____
11.	Mount MK 19 to MK 64 cradle.	_____	_____
12.	Attach feed throat.	_____	_____
13.	Attach ammunition container mounting bracket.	_____	_____
14.	Attach ammunition container.	_____	_____

2.10.4. **Performance Evaluation 2:**

- Task: Clear the MK 19:
- Condition: Given a MK 19, mounted on a tripod or vehicle, bolt forward, cover closed, selector on **safe**.
- Standard: Without assistance, clear the MK 19 within 30 seconds.

STEP	TASK	GO	NO-GO
1.	Open cover. Remove ammunition if present.	_____	_____
2.	Place selector on **fire**.	_____	_____
3.	Lock bolt to the rear.	_____	_____
4.	Return chargers to forward, up, and locked position.	_____	_____
5.	Place selector on **safe**.	_____	_____
6.	Inspect bolt face, chamber, and feed area for munitions.	_____	_____
7.	Place selector on **fire**.	_____	_____
8.	Using one charger, ride the bolt forward.	_____	_____
9.	Place selector on **safe**.	_____	_____
10.	Close cover.	_____	_____

2.10.5. **Performance Evaluation 3:**

- Task: Disassemble (field strip) the MK 19.
- Condition: Given a cleared MK 19 mounted on a tripod, bolt forward, selector on **safe**, one empty 40mm casing.
- Standard: Performing as an individual, disassemble the MK 19 in the correct sequence within 5 minutes.

STEP	TASK	GO	NO-GO
1.	Make sure bolt is forward and selector is on **safe**.	_____	_____
2.	Using the rim of the 40mm case, remove the backplate pin.	_____	_____
3.	Lift slightly and pull backplate assembly to the rear until a click is heard.	_____	_____
4.	Place selector on **fire**.	_____	_____
5.	Remove bolt and backplate assembly.	_____	_____
6.	Remove feed throat.	_____	_____
7.	Raise cover.	_____	_____
8.	Remove secondary drive lever.	_____	_____
9.	Remove feed slide assembly.	_____	_____
10.	Remove top cover assembly.	_____	_____
11.	Remove feed tray.	_____	_____
12.	Remove primary drive lever.	_____	_____
13.	Remove vertical cam assembly.	_____	_____
14.	Remove alignment guide assembly.	_____	_____
15.	Remove ogive plunger.	_____	_____
16.	Remove round positioning block.	_____	_____
17.	Remove charger assemblies.	_____	_____
18.	Dismount MK 19 and lay the receiver on its side.	_____	_____
19.	Make sure selector is on **fire**.	_____	_____
20.	Remove sear housing assembly.	_____	_____
	• Unlock sear housing assembly.	_____	_____
	• Depress sear lever.	_____	_____
	• Rotate housing 90 degrees.	_____	_____
	• Place selector on **safe**.	_____	_____
	• Lift sear housing from receiver.	_____	_____

2.10.6. **Performance Evaluation 4:**

- Task: Inspect the MK 19 for cleanliness, lubrication, and serviceability.
- Condition: Given a disassembled MK 19.
- Standard: Performing as an individual, inspect all parts for proper cleanliness, lubrication, and serviceability within 2 minutes.

STEP	TASK	GO	NO-GO
1.	Inspect all parts for cleanliness.	_____	_____
2.	Inspect all parts for lubrication.	_____	_____
3.	Inspect parts for excessive wear, cracks, burrs, and breakage.	_____	_____
4.	Inspect all visible moving parts for unrestricted movement.	_____	_____
5.	Check firing pin protrusion.	_____	_____
6.	Inspect the following parts for spring tension:		
	• Feed pawls.	_____	_____
	• Ogive plunger.	_____	_____
	• Recoil springs.	_____	_____
	• Round alignment guide.	_____	_____
	• Primary and secondary positioning pawls.	_____	_____
	• Round positioning block.	_____	_____
	• Bolt fingers and extractors.	_____	_____

2.10.7. **Performance Evaluation 5:**

- Task: Assemble the MK 19.
- Condition: Given a disassembled MK 19.
- Standard: Performing as an individual, assemble the MK 19 in the correct sequence within 5 minutes.

STEP	TASK	GO	NO-GO
1.	Attach sear housing assembly to receiver.	_____	_____
2.	Attach charger assemblies.	_____	_____
3.	Attach round positioning block.	_____	_____
4.	Insert ogive plunger.	_____	_____
5.	Insert alignment guide assembly.	_____	_____
6.	Engage vertical cam assembly.	_____	_____
7.	Engage primary drive lever.	_____	_____
8.	Attach feed tray.	_____	_____
9.	Attach feed slide assembly.	_____	_____
10.	Attach top cover assembly.	_____	_____
11.	Engage secondary drive lever.	_____	_____
12.	Attach feed throat.	_____	_____
13.	Insert bolt, backplate assembly, and backplate pin.	_____	_____

2.10.8. **Performance Evaluation 6:**

- Task: Function check the MK 19.
- Condition: Given an MK 19 mounted on a tripod or vehicle, bolt forward, selector on **safe**.
- Standard: Performing as an individual, function check the MK 19 in the correct sequence within 1 minute.

STEP	TASK	GO	NO-GO
1.	Place selector on **fire**.	_____	_____
2.	Pull bolt to rear.	_____	_____
3.	Place selector on **safe**.	_____	_____
4.	Press trigger, bolt should not go forward.	_____	_____
5.	Place selector to **fire**.	_____	_____
6.	Press trigger, bolt should go forward.	_____	_____
7.	Open cover and inspect interior of receiver for broken or missing parts.	_____	_____
8.	Check firing pin protrusion and inspect for chips or burrs.	_____	_____
9.	Check bolt face for pitting and lubrication.	_____	_____
10.	Check feed slide assembly, feed pawls, and secondary drive lever for free movement and spring tension.	_____	_____
11.	Inspect link guide for roughness.	_____	_____
12.	Make sure secondary drive lever is engaged with feed slide pin and feed slide assembly is all the way to the left.	_____	_____
13.	Close cover.	_____	_____
14.	Pull bolt to rear.	_____	_____
15.	Place selector to **safe**.	_____	_____
16.	Open cover.	_____	_____
17.	Check chamber for carbon buildup.	_____	_____
18.	Place selector on **fire**.	_____	_____
19.	Using one charger, ride the bolt.	_____	_____
20.	Place selector on **safe**.	_____	_____

2.10.9. **Performance Evaluation 7:**

- Task: Half-load, full-load, and unload the MK 19.
- Condition: Given an MK 19, mounted on a tripod or vehicle, bolt forward, selector on **safe**, and a belt of dummy ammunition.
- Standard: Without assistance, half-load, full-load, and unload the MK 19 within 3 minutes.

STEP	TASK	GO	NO-GO
1.	Clear the MK 19.	_____	_____
2.	Open the cover.	_____	_____
3.	Insert first round through feed throat and in feeder (female link first).	_____	_____
4.	Slide first round across secondary feed pawl.	_____	_____
5	Move feed slide assembly to the left.	_____	_____
6.	Close the cover.	_____	_____
THE MK 19 IS NOW HALF-LOADED.			
FULL-LOAD:			
7.	Place selector on **fire**.	_____	_____
8.	Pull charger handles to rear, locking bolt to rear.	_____	_____
9.	Return charger handles to forward, up, and locked position.	_____	_____
10.	Press trigger.	_____	_____
11.	Pull charger handles sharply to rear.	_____	_____
12.	Return charger handles to forward, up, and locked position.	_____	_____
13.	Place selector to **safe**.	_____	_____

THE MK 19 IS NOW FULL-LOADED.
UNLOAD:

14.	Make sure selector is on **safe** and bolt to the rear.	_____	_____
15.	Insert a .50 caliber machine gun cleaning rod through the right side receiver rail close to the bolt face.	_____	_____
16.	Push down on the round and force it off the bolt face and out the bottom of the gun. Catch the round as it falls out.	_____	_____
17.	Open cover.	_____	_____
18.	Reach beneath the feeder and depress the primary and secondary feed pawls.	_____	_____
19.	Slide linked rounds out of feed throat.	_____	_____
20.	Check bolt face and feed cover for munitions.	_____	_____
21.	Place on **fire**.	_____	_____
22.	Ride bolt forward.	_____	_____
23.	Place on **safe**.	_____	_____
24.	Close cover.	_____	_____

2.10.10. **Performance Evaluation 8:**

- Task: Read the T&E data from a prepared range card and set the data on the T&E and traversing bar.
- Condition: Given a MK 19 mounted on a tripod with the T&E properly zeroed and attached and a prepared range card.
- Standard: Without assistance, read the data from the prepared range card and set the data on the T&E mechanism and traversing bar within 1 minute.

STEP	TASK	GO	NO GO
1.	Obtain target direction from the range card and position traversing slide to the correct position on the traversing bar.	_____	_____
2.	Obtain elevation readings (both major and minor) from the range card and set data on the elevation hand wheel.	_____	_____

Chapter 3

M2 .50 CALIBER MACHINE GUN TRAINING PROGRAM

3.1. M2 .50 Caliber Machine Gun Air Force Qualification Course (AFQC). This course provides the minimum training and evaluation standards required to qualify Air Force members to employ the M2.

3.2. Training Overview:

3.2.1. **Initial Training.** This is the trainee's first participation in the M2 Training Program. Initial training consists of classroom instruction, passing the performance evaluations, and qualification on the required phases of the AFQC.

3.2.2. **Recurring Training--12 Month.** This is qualification training after initial qualification. It consists of classroom instruction, passing the performance evaluations, and qualification on the required phases of the AFQC. Evaluation is mandatory on an annual basis.

3.2.3. **Recurring Training--6 Month.** This is weapon operator skill recertification training. This training consists of classroom instruction and passing the performance evaluations. Evaluation is mandatory 6 months after initial and 12-month recurring training.

3.2.4. **Remedial Training.** This is the minimum training needed to correct deficiencies causing an individual to fail an evaluation.

3.2.5. **Performance Evaluations.** Performance evaluations consist of weapon operator skills certification. Evaluation is mandatory during initial, 12-month recurring, and 6-month recurring training.

3.2.6. **Unit Training.** Refresher training on operator skills and knowledge provided by units to help maintain guncrew proficiency. Units should conduct this training before exercises and deployments.

3.3. Instructor Guidelines and Ratios:

3.3.1. **Classroom.** Instructors will help trainees during portions of training requiring physical handling of weapons. Ratio: one instructor per weapon. This ratio does not include the lead instructor. They will supervise and evaluate trainees during performance evaluations. Ratio: one instructor per weapon. They will supervise and evaluate trainees during operator maintenance evaluation (care and cleaning). Ratio: one instructor per four students.

3.3.2. **Range.** Instructors will supervise, assist, coach, and teach during prefire setup, practice and evaluation orders of fire, as needed. Ratio: one instructor per weapon and one instructor as tower operator and/or line supervisor.

3.4. M2 Qualification Plan of Instruction. The plan in the following paragraphs is intended to provide instruction standardization. This program is mandatory for initial and recurring training. Trainees must meet and be evaluated to the performance standards of these training objectives. Approximate training times for this program are:

- Initial training--40 hours.
- Recurring training (12 month)--32 hours.
- Recurring training (6 month)--16 hours.
- Remedial training--as needed.

3.5. Training Goal. The training goal is to instill confidence in the trainee to develop and maintain the capability to successfully use the M2 against enemy targets and maintain the weapon to the level authorized for the operator. With the exception of operator maintenance, trainees must perform all evaluated tasks without assistance.

3.6. Training Objectives. The training objectives required for successful completion of this program are listed in table 3.1.

3.6.1. **Information Training Objectives. Trainees must be familiar with:**

- Safety rules and procedures.
- Characteristics, nomenclature, and types of ammunition.
- Methods of destruction.
- Stoppages and malfunctions.
- Roles of the machine gun.
- Classes of fire and types of targets.
- Range determination.
- Applying overhead fire.
- Zeroing the rear sight.
- Sight adjustments.
- Adjusted aiming point method.
- Alternate methods of laying the gun.

Table 3.1. Training Objectives/Intermediate Training Objectives (ITO).

	Objective	Condition	Standard
		Given:	
1.	Operate M2.	M2 with dummy ammunition.	Operate M2.
ITO			
1.1	Mount the M2 on the M3 tripod.	M2 and M3 tripod.	Mount the M2.
1.2	Clear the M2.	M2 mounted on an M3 tripod.	Clear the M2.
1.3	Set headspace and timing on the M2	M2 mounted on an M3 tripod and a set of timing and headspace gauges.	Set headspace and timing on the M2.
1.4	Half-load and unload the M2.	M2 mounted on an M3 tripod and dummy ammunition.	Half-load and unload the M2.
1.5	Full-load and unload the M2. procedures.	M2 mounted on an M3 tripod and dummy ammunition.	Full-load and unload the M2.
1.6	Perform immediate action procedures	M2 mounted on an M3 tripod.	Perform immediate action procedures.
1.7	Perform a preventative maintenance inspection.	M2 mounted on an M3 tripod. mechanism.	Perform a preventative maintenance (prefire) inspection on the M2.
1.8	Zero and attach the T&E mechanism.	M2 mounted on an M3 tripod.	Zero and attach the T&E mechanism to the M2 and M3 tripod.
1.9	Mount the M2 on a vehicle mount.	M2 and MK64 mount.	Mount the M2 on an MK64.
1.10	Place the M2 in and out of action.	M2 and dummy ammunition.	Place the M2 in and out of action.
2.	Performance evaluations.	M2, M3 tripod, dummy ammunition, range card and a blank performance evaluation form.	Successfully complete all phases of the performance evaluation within the prescribed time limits.
3.	Demonstrate effective techniques of fire.	M2 with required ammunition and equipment and a firing range of sufficient target distances.	Fire M2 with sufficient accuracy to hit targets within range and capabilities of M2 and qualify on appropriate live-fire orders.
ITO			
3.1	Zero the M2.	M2 mounted on an M3 tripod and ammunition.	Fire the practice phase, and zero the M2.
3.2	Qualify on the M2.	M2 mounted on an M3 tripod and ammunition.	Qualify on all required phases.
3.3	Prepare range cards.	M2 mounted on an M3 tripod, T&E mechanism, blank range card, and ammunition.	Prepare a range card and qualify on the appropriate phase of fire.
4.	Perform operator maintenance.	M2, associated equipment, cleaning and lubricating supplies.	Clean, inspect, and lubricate the M2 and associated equipment.
ITO			
4.1	Disassemble the M2.	M2.	Disassemble the M2.
4.2	Clean, inspect, and lubricate the M2 and equipment.	Disassembled M2, required equipment, cleaning and lubricating supplies.	Clean, inspect, and lubricate the M2 and required equipment.
4.3	Assemble the M2.	M2.	Assemble the M2.

3.7. Recommended Sequence of Events and Times:

3.7.1. **First Period--Orientation and Mechanical Training.** About 16 hours are needed for initial, 12 hours for 12-month recurring, and 8 hours for 6-month recurring training.

Prepare all required forms and documents.

Discuss:

- M2 weapon safety.
- M2 general description and characteristics.
- Methods and procedures used to destroy the M2 to prevent its use by the enemy.
- Types of ammunition, care and handling, and preservation of ammunition for the M2.
- Stoppages, immediate action, and remedial action.
- M2 general nomenclature.
- M3 tripod and T&E mechanism general description and nomenclature.

Explain, demonstrate, and conduct practical exercises on:

- Immediate action procedures.
- Clearing of the M2.
- Disassembly of the M2.
- Assembly of the M2.
- Setting headspace and timing the M2.
- Proper care, cleaning, and lubrication of the M2 and its equipment.
- Zeroing, attaching, and operating the T&E mechanism
- Loading (half-load), unloading, reloading, and clearing the M2.
- Prefiring inspection of the M2 and equipment.
- Placing the M2 into action.
- Mounting and removing the M2 using vehicle mounts.

3.7.2. **Second Period--Effective Techniques of Fire.** About 6 hours are needed for initial, 6 hours for 12-month recurring, and 4 hours for 6-month recurring training.

Discuss:

- M2 roles.
- M2 characteristics of fire.
- M2 classes of fire.
- Explain, demonstrate, and conduct practical exercises on range determination and lateral distance measurement.

Discuss:

- Characteristics of overhead fire.
- Principles of fire and types of targets to be engaged by the M2.
- Technique of engaging visible targets during periods of limited visibility to include types of targets, fire control, and target engagement.
- Techniques of delivering preplanned fire during periods of limited visibility to include grazing fire, fire control, and methods of laying the gun.
- Techniques of predetermined fires to include final protective line, principal direction of fire, dead space, and reading the T&E mechanism.
- Explain, demonstrate, and conduct practical exercises on preparation of range cards.

3.7.3. **Third Period--Preparatory Marksmanship.** About 4 hours are needed for initial, 2 hours for 12-month recurring and 6-month recurring training.

Explain, demonstrate, and conduct practical exercises on:

- Assuming proper firing positions.
- Establishing a proper grip.

Discuss principles of:

- Aiming.
- Proper trigger manipulation.
- How to zero the rear sight.
- How sight adjustments are made.
- Adjusted aiming point method of fire adjustment.
- Discuss target analysis and common errors encountered in machine gun marksmanship.
- Explain, demonstrate, and conduct practical exercises on proper techniques of firing while wearing the CWDE mask and gloves.
- Discuss the principles of target engagement with the M2 from a stationary and moving vehicle.

3.7.4. **Fourth Period--Performance Evaluations.** About 4 hours are needed for initial, 12-month recurring and 6-month recurring training.

- Prepare performance evaluation forms.
- Brief students on evaluation criteria.
- Set up weapons and equipment.

Conduct performance evaluation on:

- Clearing.
- Half-loading.
- Firing from the half-load.
- Clearing from the half-load.
- Disassembly.
- Assembly.
- Setting headspace and timing.
- Immediate action procedures.
- Reading T&E data from a prepared range card and setting the data on the T&E and traversing bar.

3.7.5. **Fifth Period--Live Fire and Operator Maintenance Evaluation.** About 10 hours are needed for initial and 12-month recurring training.

- Discuss range procedures.
- Discuss safety requirements for live firing.
- Review all factors of obtaining an accurate initial burst.
- Review immediate action procedures.
- Conduct exercises in assuming firing positions.
- Fire qualification course.
- Evaluate the trainee's proficiency in operator maintenance and function checks.

- Trainees must correctly perform the function check.
- Provide either immediate remedial training for those trainees who fail to qualify or demonstrate required proficiency in operator maintenance or notify unit training sections of the status of individuals who fail.
- Complete applicable blocks on AF Forms 522 and 710.

3.8. Administrative Requirements:

3.8.1. **Reference Material:**

- AFI 36-2226, The Air Force Combat Arms Training and Maintenance (CATM) Program.
- AFMAN 36-2227, Volumes 1 and 3, Combat Arms Training and Maintenance (CATM) Training Management and Range Operations, Combat Arms Training and Maintenance M60 Machine Gun, MK 19 40mm Machine Gun, and M2 .50 Caliber Machine Gun Programs.
- T.O. 11W2-6-3-161, M2, .50 Caliber Machine Gun (Army TM 9-1005-213-10), T.O. 11W2-6-3-172, Organizational, Direct Support, and Depot Maintenance Instruction, Including Repair Parts and Special Tolls List, Machine Gun, .50 Caliber Browing, M2 Heavy Barrel, and Mount, and T.O. 11W3-6-184, M2, .50 Caliber Machine Gun (Army TM 9-1005-213-23&P).
- US Army FM 23-65, Browning Machine Gun, Caliber .50 HB, M2.

3.8.2. **Facilities Needed:**

- Classroom equipped with chalkboard, tables, and chairs for trainees.
- Area to conduct practical exercises in assuming firing positions.
- Full-distance range.
- Vehicle fire range.
- Weapons cleaning area.

3.8.3. **Training Aids and Equipment:**

- M2, one for each two trainees (recommended).
- M3 tripod and T&E mechanism, one for each machine gun.
- MK 64 Mod 6 gun mount, as required.
- Dummy ammunition.
- Empty ammunition can and empty ammunition case.
- Care and cleaning equipment, as required by T.O. 11W2-6-3-161 or TM 9-1005-213-10.
- CWDE mask and gloves.
- Blank range cards.
- Vehicles designated as M2 firing platform.
- Targets as required.
- Public address system.
- Sound suppressors or ear plugs for instructors and trainees.
- Eye protection for instructors and trainees.
- Flak vests and helmets.

3.8.4. **Documents Needed:**

- AF Forms 522, US Air Force Ground Weapons Training Data, and 710, Ground Weapons Training Record
- Performance evaluation forms.

3.8.5. **Ammunition Needed.** Cartridge, .50 caliber linked.

Figure 3.1. M2 Machine Gun Firing Requirements, Air Force Qualification Course.

Order Number and Target Description	Ammunition and Fire Control	Type Load	Time	No. of Targets Engaged	Required No. of Target Hits (Qualify)
Phase I: Practice--Tripod					
1. Zeroing 1000M	50 (3 to 5 round burst) ball or 4:1.	Full	N/A	1	N/A
2. Point targets 500 to 1000M	50 (3 to 5 round burst) ball or 4:1.	Half	N/A	3	N/A
3. Deep targets (CWDE) 1000 to 1500M	100 (3 to 5 round burst) ball or 4:1.	Half	N/A	5	N/A
4. Linear with depth--800 to 1100M	100 (3 to 5 round burst) ball or 4:1.	Half	N/A	8	N/A
	300 Total Rounds (Practice--Tripod)				

Figure 3.1. Continued.

Order Number and Target Description	Ammunition and Fire Control	Type Load	Time	No. of Targets Engaged	Required No. of Target Hits (Qualify)
Phase II: Evaluation--Tripod					
1. Point targets (CWDE) 500 to 1000M	100 (3 to 5 round burst) ball or 4:1.	Half	2 min	3	3
2. Linear with depth and deep targets 800 to 1500M	200 (3 to 5 round burst) ball or 4:1.	Half	5 min	13	13
	300 Total Rounds (Evaluation--Tripod)				
Phase III: Practice--Vehicle Firing					
1. Zeroing 1000M	5 (3 to 5 round burst) ball or 4:1.	Half	N/A	1	N/A
	25 Total Rounds (Practice--Vehicle Firing)				
Phase IV: Evaluation--Vehicle Firing					
1. Stationary vehicle. Area target--1000M	5 (3 to 5 round burst) ball or 4:1.	Half	N/A	1	3
	75 Total Rounds (Evaluation--Vehicle Firing)				
Phase V: Practice--Predetermined Firing (Range Card), Day Fire					
1. Predetermined firing (range card). 500 to 1500M	100 (3 to 5 round burst) ball or 4:1.	Half	N/A	To obtain direction and elevation	
Target 1, Final Protective Line					
Target 2, point target					
Target 3, area target					
Target 4, linear target					
	100 Total Rounds (Practice--Predetermined Firing--Range Card)				

NOTE: See Course Information.

Figure 3.1. Continued.

Order Number and Target Description	Ammunition and Fire Control	Type Load	Time	No. of Targets Engaged	Required No. of Target Hits (Qualify)
Phase VI: Evaluation--Night Fire					
1. Predetermined Firing (range card).	100 (3 to 5 round burst) ball or 4:1.	Half	N/A	4	4
Fire Missions: Target 4					
Target 3					
Target 2					
Target 1					
	100 Total Rounds (Evaluation--Night Fire)				
	900 Total Rounds For Course				

NOTE: See Course Information.

3.9. Course Information:

3.9.1. **Course Targets:**

- Double "E" silhouette targets, empty 55-gallon drums, salvaged vehicles, or mounds of earth can be used to represent personnel and vehicle targets.
- Point targets should consist of three separate vehicle type targets.
- Deep targets should consist of a minimum of five targets.
- Linear with depth targets should consist of at least eight double "E" silhouette targets or paired 55-gallon drums.
- Area targets should consist of at least five double "E" silhouette targets or paired 55-gallon drums and arranged to form a group.
- On Phase V, designate four targets to be identified on the range cards.
- On Phase VI, conduct fire missions in reverse or random order of the targets designated on the range cards.

3.9.2. **Course Standards:**

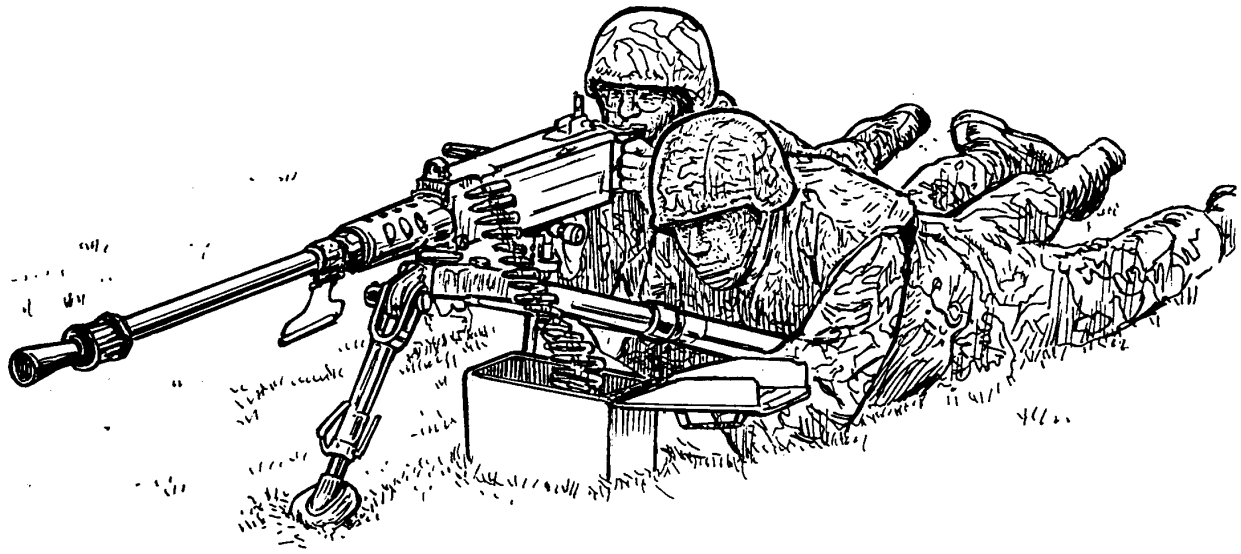
- On Phase II, Order 1, if beaten zone covers target area, it is considered a hit. Gunner must hit three targets.
- On Phase II, Order 2, if beaten zone covers target area, it is considered a hit. Gunner must hit 13 targets. Initial lay on the deep target is at midpoint. The gunner then searches down to the near end, up to the far end, and then back to the midpoint. Initial lay on the linear target with depth is midpoint. The gunner then traverses and searches to the near flank (left), back to the far flank (right), and then back to the midpoint.
- On Phase IV, if beaten zone covers target area, it is considered a hit. Gunner must have at least three bursts on target from a stationary position.
- On Phase VI, if beaten zone covers target area, it is considered a hit. Gunner must hit four targets.

3.9.3. **Course Notes:**

- There are no time limits during practice phases. Instructors will observe setting headspace and timing, render help needed, observe rounds impacting in target areas, correct safety infractions, and supervise trainees who perform immediate action.
- Assistant gunners will be used for all orders of fire. Instructors should emphasize the importance of teamwork. Except for zeroing, the assistant gunner will give fire corrections to the gunner. Gun crews will wear helmets with liners and hearing protection during all firing orders. Gun crews will wear flak vests during live fire. Both gunner and assistant gunner must have protective masks and gloves on their person during the entire course.
- Whenever possible, gun crews should fire 4:1 ball and tracer mix. All firing should be three to five round burst; however, if assistant gunner is unable to observe beaten zone, five to seven round burst may be necessary.
- Sight corrections and T&E adjustments may be made at any time throughout the course.

- All phases must be fired on a full-distance range.
- On orders requiring CWDE, the guncrews will don their protective masks and gloves before starting the firing orders.
- Linear and deep targets will be engaged as a single gun covering the entire target.
- On Phase III and Phase IV, the vehicle may be positioned parallel with or at a right angle to the firing line with the weapon pointed down range.
- Phase V and Phase VI are used to train and evaluate guncrews' ability to prepare range cards and engage targets using range cards. On Phase V, they will use a 100-round belt during daylight hours to obtain direction and readings for the targets indicated. They will have 15 minutes to prepare field expedient range cards using bandoleer boxes, wooden spacers from ammunition crates, etc., and complete Phase V. During phase VI, gun crews will fire four fire missions using range cards prepared during phase V. Night vision devices, illumination rounds, or flares may be used with night-fire training.
- In the event that night fire cannot be accomplished, Phases V and VI will be conducted during the day.
- Do not reconstruct firing ranges for the sole purpose of complying with this course of fire.
- Should the gunner fail to achieve a qualifying score on any evaluation order, the gunner is considered unqualified. However, the gunner need only refire and qualify on the orders failed.
- AF Forms 522 or 710 should only reflect qualified "Q" or unqualified "UQ" for each firing phase. A numerical score is not required in the score block of these forms.

Figure 3.2. Prone Position.

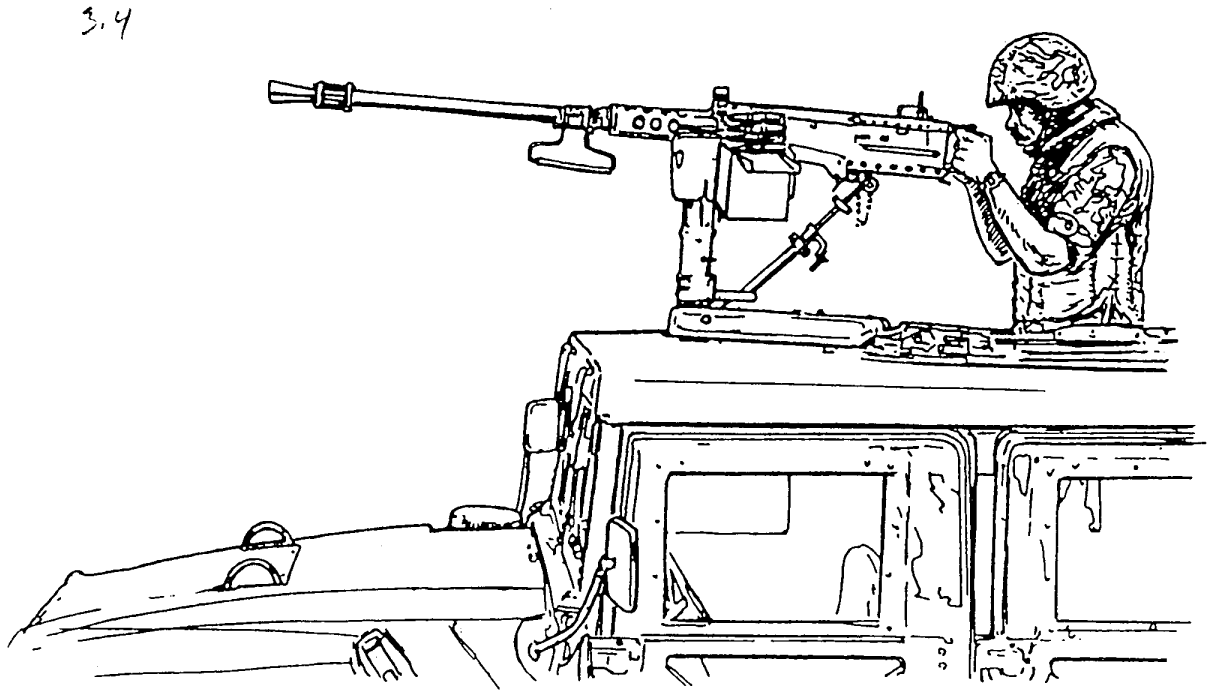


Prone Position. The gunner lays to the rear of the tripod and directly behind the gun. The gunner's legs are spread and feet are as flat as possible with toes turned outward. The left elbow may rest on the ground but the left hand should be placed on the T&E mechanism to allow rapid elevation and or traverse adjustments. The right hand is on the right spade grip and positioned to actuate the trigger. The assistant gunner's position is to the gunner's left. The assistant gunner is responsible for spotting targets, calling adjustments of fire to the gunner, clearing expended brass from under the receiver, etc.

Figure 3.3. Sitting Position.

Sitting Position. The gunner sits between the tripod's rear legs and directly behind the gun. The gunner may sit with the legs extended under the tripod or with legs crossed, whichever is more comfortable. Elbows are on the inside of the thighs for stability. The left hand should be placed on the T&E mechanism to allow rapid elevation and or traverse adjustments. The right hand is on the right spade grip and positioned to actuate the trigger. The assistant gunner's position is to the gunner's left. The assistant gunner is responsible for spotting targets, calling adjustments of fire to the gunner, clearing expended brass from under the receiver, etc.

Figure 3.4. Vehicle Mounted Position.



Vehicle Mounted Position. The gunner is positioned directly behind the weapon, both elbows are locked against the sides of the body. The gunner's position is low enough in the vehicle to align the sights.

Figure 3.5. M2 Machine Gun Performance Evaluations.

3.10. Performance Evaluation Information:

- Before Test. CATM instructors must make sure the test station and equipment configuration is prepared the same for all people evaluated. Make sure the weapon and equipment are returned to operational condition following previous evaluations. Instructors must make every effort to make sure the instructions are the same for all people evaluated.
- During Test. Instructors are not to help trainees. Instructors are to intervene only to prevent injury to personnel or damage to equipment or when the trainee demonstrates inability to complete a step in the task sequence. If necessary, instructors will perform steps or procedures necessary to continue the evaluation. Instructors will evaluate task performance and document results on the forms provided.
- After Test. After each performance task, instructors will provide remedial training for all items performed incorrectly. Instructors will demonstrate the correct procedures and explain what the trainee did wrong. Instructors must then prepare the test station for the next evaluation. Return weapon to operational condition if required, and reconfigure weapon and equipment to the start position.
- Scoring Results. CATM instructors will evaluate all tasks and individual steps for completing the tasks and annotate the scoresheet as "GO" or "NO-GO." Performing individual steps out of sequence, adding steps, or accomplishing unnecessary actions do not necessarily constitute task failure. Instructors must evaluate students' performance to determine if actions taken were safe procedures, resulted in correct functioning and operation, and accomplished the purpose of the task. Tasks not completed within the established time limits are scored as "NO-GO."

3.10.1. **Performance Evaluation 1:**

- Task: Clear the M2.
- Condition: Given an M2 mounted on an M3 tripod, cover closed, bolt forward, bolt-latch release lever down.
- Standard: Without assistance, clear the M2 within 30 seconds.

STEP	TASK	GO	NO-GO
1.	Open cover.	_____	_____
2.	Pull retracting slide handle to rear.	_____	_____
3.	Inspect chamber and T-slot for live rounds.	_____	_____
4.	Pull retracting slide handle to rear, press bolt-latch release, and ride bolt forward.	_____	_____

3.10.2. **Performance Evaluation 2:**

- Task: Half load the M2.
- Condition: Given a cleared M2 mounted on an M3 tripod, cover closed, bolt forward, a belt of dummy ammunition.
- Standard: Without assistance, half load the M2 within 30 seconds.

STEP	TASK	GO	NO-GO
1.	Open cover.	_____	_____
2.	Insert double loop end of ammunition in feedway until first cartridge is held by belt holding pawl.	_____	_____
3.	Close cover.	_____	_____

3.10.3. **Performance Evaluation 3A:**

- Task: Fire the M2 (single shot) from the half-load mode.
- Condition: Given a half-loaded (closed cover) M2 mounted on a M3 tripod.
- Standard: Simulate firing the M2 from the half-load mode within 15 seconds.

STEP	TASK	GO	NO-GO
1.	Lock bolt to rear and return retracting handle forward.	_____	_____
2.	Press the bolt-latch release and allow bolt to go forward.	_____	_____

3.	Lock bolt to rear and return retracting slide handle forward.	_____	_____
4.	Press the bolt-latch release and allow bolt to go forward.	_____	_____
5.	Press the trigger.	_____	_____

3.10.4. **Performance Evaluation 3B:**

- Task: Fire the M2 (full automatic) from the half-load mode.
- Condition: Given a half-loaded (closed cover) M2 mounted on a M3 tripod.
- Standard: Simulate firing the M2 from the half-load mode within 15 seconds.

STEP	TASK	GO	NO-GO
1.	Lock bolt to rear and return retracting slide handle forward.	_____	_____
2.	Press the bolt-latch release and rotate bolt-latch release lock until bolt-latch release is firmly held down.	_____	_____
3.	Press the trigger.	_____	_____

3.10.5. **Performance Evaluation 4:**

- Task: Clear the M2 from the half-load mode.
- Condition: Given an M2 half-loaded (closed cover) with dummy rounds and mounted on a M3 tripod.
- Standard: Clear the M2 within 15 seconds.

STEP	TASK	GO	NO-GO
1.	Make sure bolt-latch release lock is off.	_____	_____
2.	Open cover and remove ammunition.	_____	_____
3.	Lock bolt to rear and inspect chamber, T-slot, and trunnion block.	_____	_____
4.	Press bolt-latch release and ride bolt forward.	_____	_____
5.	Close cover.	_____	_____

3.10.6. **Performance Evaluation 5:**

- Task: Disassemble the M2.
- Condition: Given a cleared M2 mounted on a M3 tripod.
- Standard: Disassemble the M2 within 8 minutes.

STEP	TASK	GO	NO-GO
1.	Make sure weapon is clear.	_____	_____
2.	Open cover and pull retracting slide hand to rear enough to align the barrel extension locking lug in the 3/8" hole on right side of receiver.	_____	_____
3.	Unscrew barrel from receiver.	_____	_____
4.	Return retracting slide handle forward.	_____	_____
5.	Remove backplate assembly from receiver.	_____	_____
6.	Remove driving spring rod.	_____	_____
7.	Pull bolt assembly to rear enough to remove bolt stud.	_____	_____
8.	Remove bolt assembly from receiver.	_____	_____
9.	Remove extractor.	_____	_____
10.	Remove bolt switch from bolt.	_____	_____
11.	Remove cocking lever pin.	_____	_____
12.	Remove cocking lever.	_____	_____
13.	Remove accelerator stop lock.	_____	_____
14.	Remove accelerator stop.	_____	_____
15.	Remove sear slide.	_____	_____
16.	Remove sear and sear spring.	_____	_____
17.	Remove firing pin assembly and separate		

	firing pin from firing pin assembly.	_____	_____
18.	Remove barrel buffer body.	_____	_____
19.	Separate the barrel buffer body group from the barrel extension group.	_____	_____
20.	Separate buffer assembly from buffer body.	_____	_____
21.	Separate buffer accelerator from barrel buffer body.	_____	_____
22.	Separate breech lock from barrel extension.	_____	_____

3.10.7. **Performance Evaluation 6:**

- Task: Assemble the M2.
- Condition: Given a disassembled M2, a M3 tripod, any necessary equipment.
- Standard: Assemble the M2 within 5 minutes.

STEP	TASK	GO	NO-GO
1.	Attach breech lock to barrel extension.	_____	_____
2.	Attach buffer accelerator to barrel buffer body.	_____	_____
3.	Attach buffer assembly to buffer body.	_____	_____
4.	Attach barrel buffer body assembly to barrel extension assembly.	_____	_____
5.	Install firing pin and firing pin assembly into bolt.	_____	_____
6.	Install sear spring and sear.	_____	_____
7.	Install sear slide.	_____	_____
8.	Install accelerator stop.	_____	_____
9.	Install accelerator stop lock.	_____	_____
10.	Install cocking lever.	_____	_____
11.	Install bolt switch.	_____	_____
12.	Install extractor.	_____	_____
13.	Attach barrel extension body assembly.	_____	_____
14.	Install barrel extension assembly and barrel buffer body assembly into receiver.	_____	_____
15.	Install bolt stud.	_____	_____
16.	Install driving spring assembly.	_____	_____
17.	Install backplate assembly.	_____	_____
18.	Install barrel.	_____	_____

3.10.8. **Performance Evaluation 7:**

- Task: Set headspace and timing on the M2.
- Condition: Given an M2 without proper headspace and timing, mounted on a M3 tripod, cover open, headspace and timing gauge.
- Standard: Set proper headspace and timing within 3 minutes.

STEP	TASK	GO	NO-GO
1.	Make sure weapon is clear.	_____	_____
2.	Make sure barrel has been backed off two clicks.	_____	_____
3.	Make sure weapon is in single-shot mode.	_____	_____
4.	Make sure weapon is cocked.	_____	_____
5.	Pull retracting slide handle to rear approximately 1/16" and insert GO end of GO/NO-GO gauge down to center ring between face of bolt and end of barrel.	_____	_____

6.	After GO end of gauge has been inserted, attempt to insert NO-GO end of gauge.	_____	_____

NOTE: After trainee has successfully set headspace, have trainee set timing.

7.	Pull retracting slide handle to rear approximately 1/16" and insert NO FIRE gauge with beveled edge against barrel notches.	_____	_____
8.	Gently close bolt on gauge.	_____	_____
9.	Depress trigger--Should not fire.	_____	_____
10.	Retract bolt enough to remove gauge and insert fire gauge with beveled edge against barrel notches.	_____	_____
11.	Gently close bolt on gauge.	_____	_____
12.	Depress trigger--Should fire.	_____	_____

3.10.9. **Performance Evaluation 8:**

- Task: Perform immediate action.
- Condition: Given a M2 mounted on a M3 tripod and dummy rounds (optional) with a simulated malfunction or misfire.
- Standard: Perform immediate action and put weapon back into service within 30 seconds.

STEP	TASK	GO	NO-GO
1.	Assuming the misfire just occurred, gunner waits 5 seconds.	_____	_____
2.	Pull retracting slide handle to rear.	_____	_____
3.	If round is ejected, gunner reaims and attempts to fire.	_____	_____
4.	If round is not ejected, hold retracting slide handle to rear, open cover, remove ammunition, inspect weapon.	_____	_____
5.	If round is in chamber, close cover, allow bolt to go forward, attempt to fire.	_____	_____

3.10.10 **Performance Evaluation 9:**

- Task: Read the T&E data from a prepared range card and set the data on the T&E and traversing bar.
- Condition: Given a M2 with the T&E properly zeroed and attached and a prepared range card.
- Standard: Without assistance, read the data from the prepared range card and set the data on the T&E mechanism and traversing bar within 1 minute.

STEP	TASK	GO	NO-GO
1.	Obtain target direction from the range card and position traversing slide to the correct position on the traversing bar.	_____	_____
2.	Obtain elevation readings (both major and minor) from the range card and set data on the elevation hand wheel.	_____	_____

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Chief of Security Police

GLOSSARY OF REFERENCES, ABBREVIATIONS, ACRONYMS, AND TERMS

References

AFPD 36-22, ***Air Force Training***
AFI 36-2226, ***The Air Force Combat Arms Training and Maintenance Program***

Abbreviations and Acronyms

AFC-SQC	Air Force Crew-Served Qualification Course
AFIQC	Air Force Individual Qualification Course
AFOSI	Air Force Office of Special Investigations
AFQC	Air Force Qualification Course
AETC	Air Education and Training Command
CATM	Combat Arms Training and Maintenance
CWDE	Chemical Warfare Defense Ensemble
FM	Field Manual
GTA	Graphic Training Aid
HMMWV	High Mobility Multipurpose-wheeled Vehicle
ITO	Intermediate Training Objectives
mm	Millimeter
MAJCOM	Major Command
MILES	Multiple Integrated Laser Engagement System
PDO	Publishing Distribution Office
T&E	Traverse and Elevation
TM	Technical Manual
TO	Technical Order